



# OD200-0301W15

OD200

**DISPLACEMENT SENSORS**

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
OD200-0301W15	6086978

Other models and accessories → [www.sick.com/OD200](http://www.sick.com/OD200)



### Detailed technical data

#### Features

<b>Measuring range</b>	25 mm ... 35 mm <sup>1)</sup>
<b>Target</b>	Natural objects
<b>Repeatability</b>	2 µm <sup>2) 3) 4)</sup>
<b>Linearity</b>	± 10 µm <sup>2) 4) 5)</sup>
<b>Response time</b>	≥ 1 ms <sup>6)</sup>
<b>Measuring frequency</b>	≤ 3 kHz
<b>Output time</b>	≥ 0.5 ms
<b>Light source</b>	Laser, red
<b>Type of light</b>	Visible red light
<b>Laser class</b>	1 (IEC 60825-1:2014, EN 60825-1:2014) <sup>7)</sup>
<b>Typ. light spot size (distance)</b>	200 µm x 500 µm (30 mm)
<b>Additional function</b>	Adjustable average value or media filter, Switching mode: one-point mode/window mode/two-point mode, Teach-in of digital output, Peak value selection
<b>Safety-related parameters</b>	
	MTTF <sub>D</sub> 169 years
	DC <sub>avg</sub> 0%

<sup>1)</sup> 6 % ... 90 % remission; at default settings.

<sup>2)</sup> Measurement on 60 % remission (ceramic, white).

<sup>3)</sup> Mean value setting: 128, median: off, measuring frequency: 1 kHz, for static measurement.

<sup>4)</sup> Observe min. warm-up time of 30 minutes.

<sup>5)</sup> At T = +25 °C, under constant general conditions.

<sup>6)</sup> Dependent on the set average or sensitivity.

<sup>7)</sup> Visible, wavelength: 655 nm, max. average power: 0.31 mW, max. pulse power: 0.62 mW, max. pulse duration: 2 ms.

## Interfaces

<b>IO-Link</b>	Function	✓ , IO-Link V1.1
	Data transmission rate	Process data, parameterization, diagnosis, data storage 230,4 kbit/s (COM3), Process data length 6 bytes, min. cycle time 0.8 ms
<b>Digital input</b>	In	
	Number	1
<b>Digital output</b>	Number	1 <sup>1) 2)</sup>
	Type	PNP/NPN, selectable
	Maximum output current $I_A$	≤ 100 mA
<b>Analog output</b>	Number	1
	Type	Current output / voltage output
	Function	Selectable
	Current	4 mA ... 20 mA, ≤ 300 Ω
	Voltage	0 V ... 10 V, > 20,000 Ω
	Resolution	16 bit

<sup>1)</sup> PNP: HIGH =  $V_S - (< 2.5 \text{ V})$  / LOW = 0 V.

<sup>2)</sup> NPN: HIGH =  $< 2.5 \text{ V}$  / LOW =  $V_S$ .

## Electronics

<b>Supply voltage U<sub>B</sub></b>	DC 18 V ... 24 V, ± 10%, including residual ripple <sup>1)</sup>	
<b>Power consumption</b>	1.5 W, At 24 V DC <sup>2)</sup>	
<b>Warm-up time</b>	< 15 min	
<b>Display</b>	OLED display, status LEDs	
<b>Enclosure rating</b>	IP67	
<b>Protection class</b>	III (EN 50178)	
<b>Electrical safety</b>	IEC 60947-5-2 / CSA C22.2 / No.60947-5-2	
<b>Pinouts</b>	BN 1	+ (L+)
	BU 3	- (M)
	BK 4	Q/C
	WH 2	Q <sub>A</sub>
	GY 5	In

<sup>1)</sup> Limit values, reverse-polarity protected.

<sup>2)</sup> Without load, at +20 °C.

## Mechanics

<b>Dimensions (W x H x D)</b>	18.4 mm x 46.4 mm x 33 mm
<b>Control elements</b>	4 buttons
<b>Housing material</b>	Metal (Aluminum)
<b>Window material</b>	Plastic (PMMA)
<b>Weight</b>	55 g

<b>Connection type</b>	Cable with plug M12, 5-pin, 345 mm
<b>Connection type Detail</b>	
Length of male connector	45 mm
Length of cable	300 mm
Cable diameter	5.5 mm
Conductor cross section	0.128 mm <sup>2</sup>
Cable material	PVC

### Ambient data

<b>Ambient temperature, operation</b>	-10 °C ... +50 °C, Operating temperature at V <sub>S</sub> = 24 V
<b>Ambient temperature, storage</b>	-20 °C ... +60 °C
<b>Relative air humidity (non-condensing)</b>	35 % ... 85 %
<b>Temperature drift</b>	3 µm/K <sup>1)</sup>
<b>Typ. Ambient light immunity</b>	Artificial light: 10,000 lx <sup>2)</sup> Sunlight: 10,000 lx
<b>Vibration resistance</b>	EN 60068-2-6 (IEC 60068-2-6:2007) Sinusoidal resonance measurement: 10 Hz ... 55 Hz, amplitude 1.5 mm, 2 h/axis
<b>Shock resistance</b>	EN 60068-2-27 (IEC 60068-2-27:2008) 50 g, 11 ms, 6 axes, ± 3 single shocks

<sup>1)</sup> 0.03%/K.

<sup>2)</sup> With constant object movement in the measuring range.

### Classifications

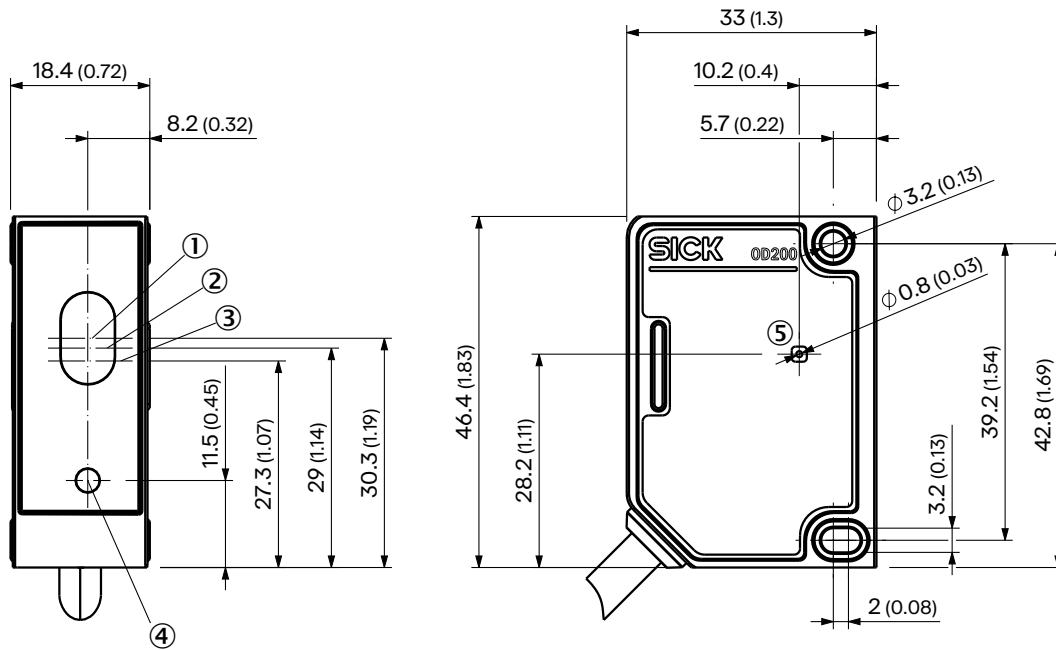
<b>ECLASS 5.0</b>	27270801
<b>ECLASS 5.1.4</b>	27270801
<b>ECLASS 6.0</b>	27270801
<b>ECLASS 6.2</b>	27270801
<b>ECLASS 7.0</b>	27270801
<b>ECLASS 8.0</b>	27270801
<b>ECLASS 8.1</b>	27270801
<b>ECLASS 9.0</b>	27270801
<b>ECLASS 10.0</b>	27270801
<b>ECLASS 11.0</b>	27270801
<b>ECLASS 12.0</b>	27270916
<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>	✓

Moroccan declaration of conformity	✓
China-RoHS	✓
IO-Link	✓

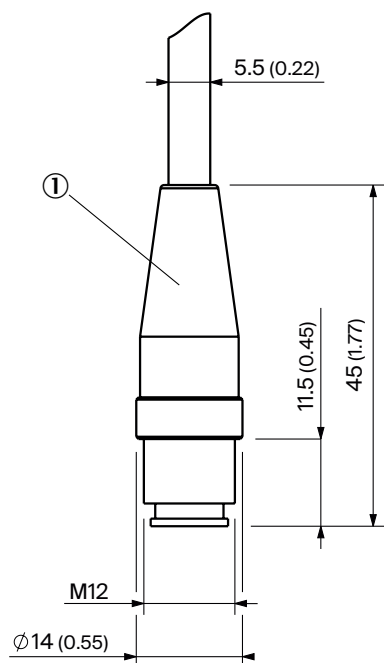
## Dimensional drawing, sensor



Dimensions in mm (inch)

- ① optical axis, receiver (OD200-110xxxx)
- ② optical axis, receiver (OD200-050xxxx)
- ③ optical axis, receiver (OD200-030xxxx)
- ④ optical axis, sender
- ⑤ Ventilation element (membrane)

### dimensional drawing, connection type

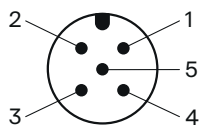


Dimensions in mm (inch)

Cable with M12 male connector

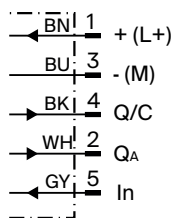
① connection (see technical data for length of cable)

### pinouts

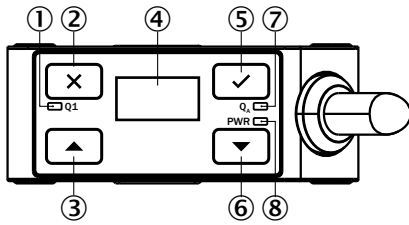


Male connector, M12, 5-pin, A-coded

### Connection diagram

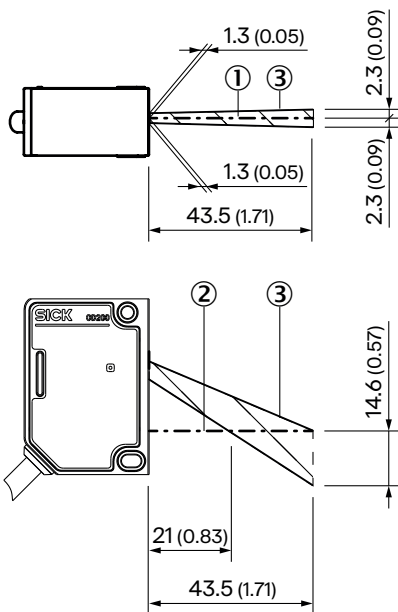


## Display and control elements



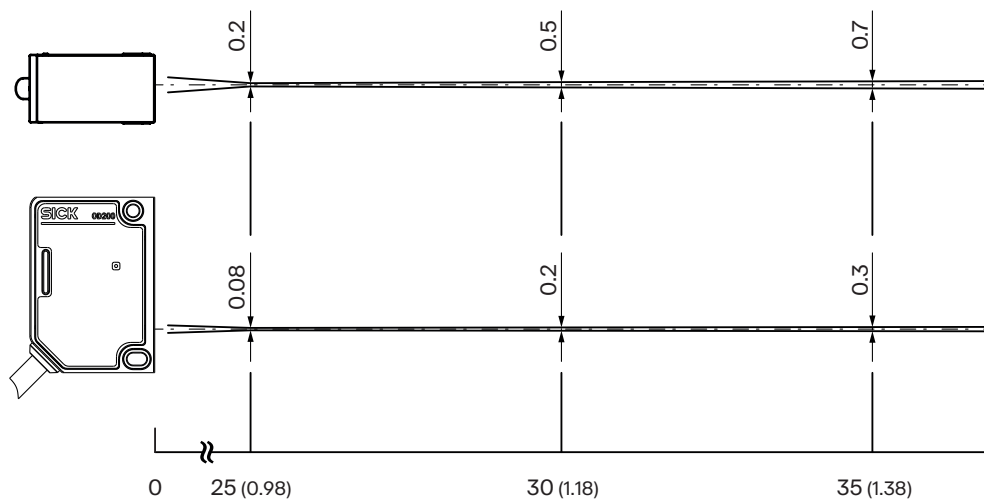
- ① Q1 status LED (orange)
- ② Cross pushbutton
- ③ UP pushbutton
- ④ Display
- ⑤ Tick pushbutton
- ⑥ DOWN pushbutton
- ⑦ Status LED QA (yellow)
- ⑧ PWR status LED (green)

## Interference diagram

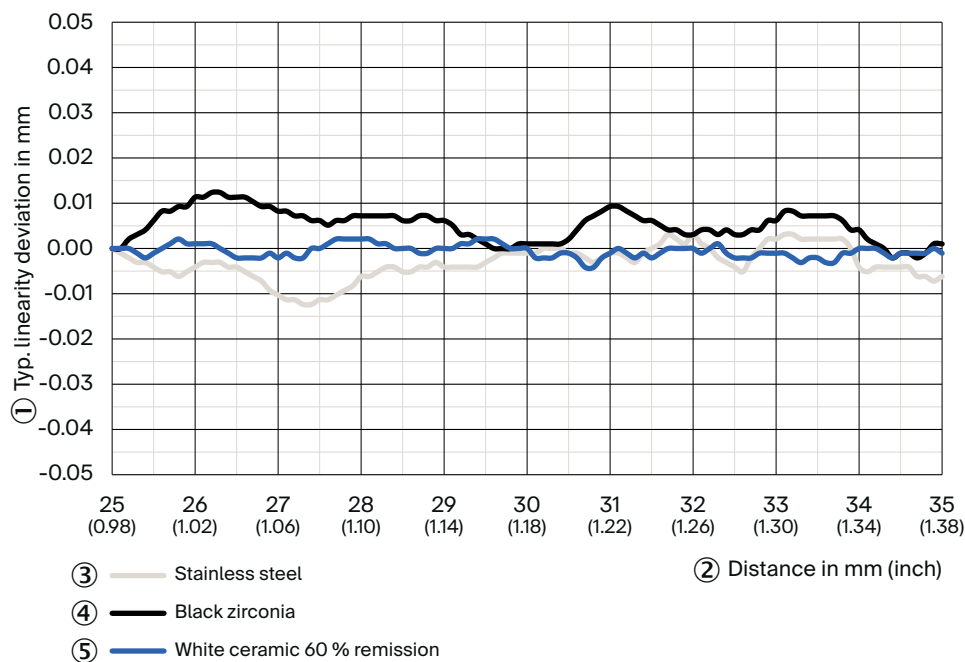


- ① optical axis, sender and receiver
- ② optical axis, sender
- ③ Interference range

### Light spot size



### Linearity



① Typical linearity deviation in mm

② Distance in mm (inch)

③ stainless steel




④ Black Zirconia

⑤ White ceramic 60 % remission



## Recommended accessories

Other models and accessories → [www.sick.com/OD200](http://www.sick.com/OD200)

	Brief description	Type	part no.
connectors and cables			
	<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, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-020VB5XLEAX	2096239
	<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> 5 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-050VB5XLEAX	2096240
	<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> 10 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-100VB5XLEAX	2096241

## 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)