



# OL1S/OL1E-R1010A13

## OL1

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	Part no.
OL1S/OL1E-R1010A13	6065943

The OL1 optical micrometer must be used in conjunction with the AOD1 evaluation unit (see "Recommended accessories")

Other models and accessories → [www.sick.com/OL1](http://www.sick.com/OL1)

## Detailed technical data

### Features

<b>Measuring range</b>	10 mm				
<b>Installation distance</b>	0 mm ... 300 mm, Sender/receiver				
<b>Minimum detectable object</b>	0.2 mm				
<b>Repeatability</b>	10 µm				
<b>Linearity</b>	± 40 µm				
<b>Response time</b>	≥ 0.5 ms				
<b>Light source</b>	Laser, red visible red light				
<b>Type of light</b>	Visible red light				
<b>Laser class</b>	1 (IEC 60825-1:2014, EN 60825-1:2014)				
<b>Typ. light spot size (distance)</b>	3 mm x 14 mm				
<b>Additional function</b>	Measurement modes: Edge detection or diameter/width measurement Adjustable average filter Sensitivity adjustment for measuring transparent objects				
<b>Safety-related parameters</b>	<table border="0"> <tr> <td>MTTF<sub>D</sub></td> <td>101 years</td> </tr> <tr> <td>DC<sub>avg</sub></td> <td>0%</td> </tr> </table>	MTTF <sub>D</sub>	101 years	DC <sub>avg</sub>	0%
MTTF <sub>D</sub>	101 years				
DC <sub>avg</sub>	0%				

### Interfaces

<b>Serial</b>	✓
Remark	For communication with AOD1 evaluation unit
<b>Digital output</b>	
Number	3 <sup>1)</sup>
Type	PNP/NPN, selectable
<b>Analog output</b>	
Number	1 <sup>1)</sup>
Type	Current output

<sup>1)</sup> Optional over evaluation unit AOD1.

Current	4 mA ... 20 mA, ≤ 300 Ω
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<sup>1)</sup> Optional over evaluation unit AOD1.

## Electronics

<b>Supply voltage <math>U_B</math></b>	12 V DC ... 24 V DC, ± 10%, including residual ripple
<b>Power consumption</b>	≤ 0.96 W, sender <sup>1)</sup> ≤ 0.24 W, receiver <sup>1)</sup>
<b>Warm-up time</b>	≤ 10 min
<b>Indication</b>	1 Status LED (sender) 2 status LEDs (receiver)
<b>Enclosure rating</b>	IP50
<b>Protection class</b>	III

<sup>1)</sup> Without load.

## Mechanics

<b>Dimensions (W x H x D)</b>	9.6 mm x 61 mm x 21 mm
<b>Housing material</b>	Metal (Aluminum die cast)
<b>Window material</b>	Glass
<b>Weight</b>	30 g (sender) 30 g (receiver)
<b>Connection type</b>	Cable with M8 male connector, 4-pin, Y cable for connection to AOD1 evaluation unit

## Ambient data

<b>Ambient temperature, operation</b>	-10 °C ... +50 °C <sup>1)</sup>
<b>Ambient temperature, storage</b>	-20 °C ... +60 °C
<b>Relative air humidity (non-condensing)</b>	35 % ... 85 %
<b>Temperature drift</b>	± 2 μm/K
<b>Typ. Ambient light immunity</b>	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 lx
<b>Vibration resistance</b>	EN 60068-2-6
<b>Shock resistance</b>	EN 60068-2-27

<sup>1)</sup> Operating temperature at  $V_S = 24$  V.

## 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

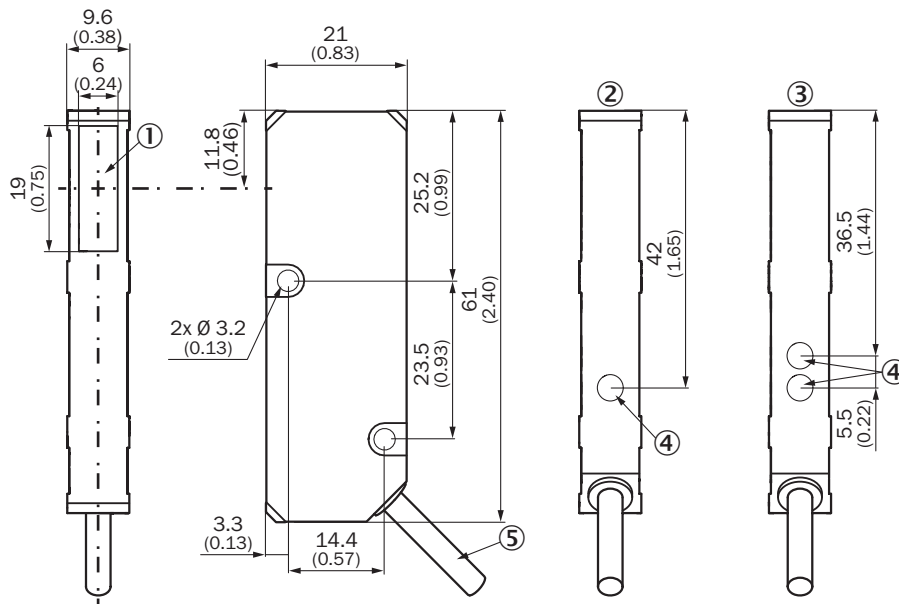
# OL1S/OL1E-R1010A13 | OL1

## DISPLACEMENT MEASUREMENT SENSORS

<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 (Dimensions in mm (inch))

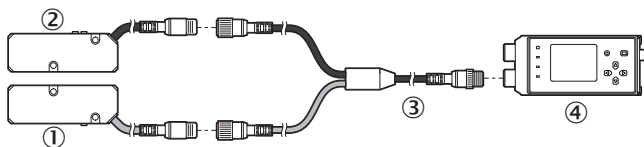
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- ① Window
- ② Sender
- ③ Receiver
- ④ LED
- ⑤ Connection cable

### Connection diagram


OL1



- ① OL1 sender (connected with gray cable)
- ② OL1 receiver (connected with black cable)
- ③ Y-cable
- ④ AOD1 (not included with delivery)

## Recommended accessories

Other models and accessories → [www.sick.com/OL1](http://www.sick.com/OL1)

	Brief description	Type	Part no.
Evaluation units			
	OD Mini evaluation unit, OD5000 and OL1, master, 3 x Q, 1 x analog, open end cable, 2 m	AOD1-MR27C4	6058195
	OD Mini evaluation unit, OD5000 and OL1, slave, 3 x Q, 1 x analog, open end cable, 2 m	AOD1-SR27C4	6058196

## Recommended services

Additional services → [www.sick.com/OL1](http://www.sick.com/OL1)

	Type	Part no.
Commissioning		
<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)