



# OD1000-6001R15

## OD1000

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
OD1000-6001R15	1075638

Other models and accessories → [www.sick.com/OD1000](http://www.sick.com/OD1000)



### Detailed technical data

#### Features

<b>Measuring range</b>	200 mm ... 1,000 mm <sup>1)</sup>
<b>Target</b>	Natural objects
<b>Repeatability</b>	0.4 mm <sup>2) 3)</sup>
<b>Linearity</b>	± 1.5 mm <sup>2) 4)</sup>
<b>Response time</b>	≥ 1.5 ms <sup>5)</sup>
<b>Output time</b>	≥ 0.33 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) <sup>6)</sup>
<b>Typ. light spot size (distance)</b>	1.5 mm x 1.5 mm (200 mm ... 1,000 mm)
<b>Additional function</b>	Adjustable average value or media filter Switching mode: Distance to Object (DtO) / switching window / object between sensor and background (ObSB) Teach-in of digital output Invertable digital output Teach-in of analog output Invertable analog output Switchable analog output (mA / V) Multifunctional input: laser off / external teach-in / deactivated Switch-off display Lock user interface

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

<sup>2)</sup> With 90% remission (white), with constant ambient conditions.

<sup>3)</sup> Statistical error 3 σ.

<sup>4)</sup> Observe min. warm-up time of 10 minutes.

<sup>5)</sup> With measuring frequency of 3 kHz, target change white 90%/white 90%.

<sup>6)</sup> Wavelength 655 nm, max. pulse output 0.78 mW, max. average power 0.39 mW, max. pulse duration 1.8 ms.

<b>Safety-related parameters</b>		Display can be rotated by 180° Alarm function Edge height jump Time functions (ON/OFF delay, 1 shot)
	MTTF <sub>D</sub>	100 years
	DC <sub>avg</sub>	0%

- 1) 6 % ... 90 % remission; at default settings.  
 2) With 90% remission (white), with constant ambient conditions.  
 3) Statistical error 3  $\sigma$ .  
 4) Observe min. warm-up time of 10 minutes.  
 5) With measuring frequency of 3 kHz, target change white 90%/white 90%.  
 6) Wavelength 655 nm, max. pulse output 0.78 mW, max. average power 0.39 mW, max. pulse duration 1.8 ms.

## Interfaces

<b>IO-Link</b>		✓ , IO-Link V1.1, IO-Link V1.0
	Function	Process data, parameterization, diagnosis, data storage
	Data transmission rate	230,4 kbit/s (COM3) / 38,4 kbit/s (COM2)
<b>Digital input</b>		In <sub>1</sub> Can be used as laser off, external teach-in, or deactivated
<b>Digital output</b>	Number	2 <sup>1)</sup>
	Type	Push-pull: PNP/NPN
<b>Analog output</b>	Number	1
	Type	Current output / voltage output
	Current	4 mA ... 20 mA, $\leq 600 \Omega$
	Voltage	0 V ... 10 V, $> 20,000 \Omega$
	Resolution	16 bit

- 1) PNP: HIGH =  $U_V - (< 3 \text{ V})$  / LOW =  $< 3 \text{ V}$ ; NPN: HIGH =  $< 3 \text{ V}$  / LOW =  $U_V$ .

## Electronics

<b>Supply voltage <math>U_B</math></b>	DC 18 V ... 30 V <sup>1)</sup>
<b>Power consumption</b>	$\leq 2.5 \text{ W}$ <sup>2)</sup>
<b>Ripple</b>	$\leq 5 \text{ V}_{pp}$ <sup>3)</sup>
<b>Warm-up time</b>	$< 10 \text{ min}$
<b>Indication</b>	OLED display, status LEDs
<b>Enclosure rating</b>	IP65 IP67
<b>Protection class</b>	III (EN 50178)

- 1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.  
 2) Without load, at +20 °C.  
 3) May not fall short of or exceed  $V_S$  tolerances.

## Mechanics

<b>Dimensions (W x H x D)</b>	25.9 mm x 71.5 mm x 53.2 mm
<b>Control elements</b>	4 buttons

<b>Housing material</b>	Metal (zinc diecast)
<b>Window material</b>	Plastic (PMMA)
<b>Weight</b>	280 g
<b>Connection type</b>	Cable with male connector, M12, 5-pin, A-coded, 30 cm

#### 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>Temperature drift</b>	0.15 mm/K
<b>Typ. Ambient light immunity</b>	Artificial light: ≤ 3,000 lx <sup>1)</sup> Sunlight: ≤ 10,000 lx
<b>Vibration resistance</b>	EN 60068-2-6, EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27

<sup>1)</sup> With constant object movement in the measuring range.

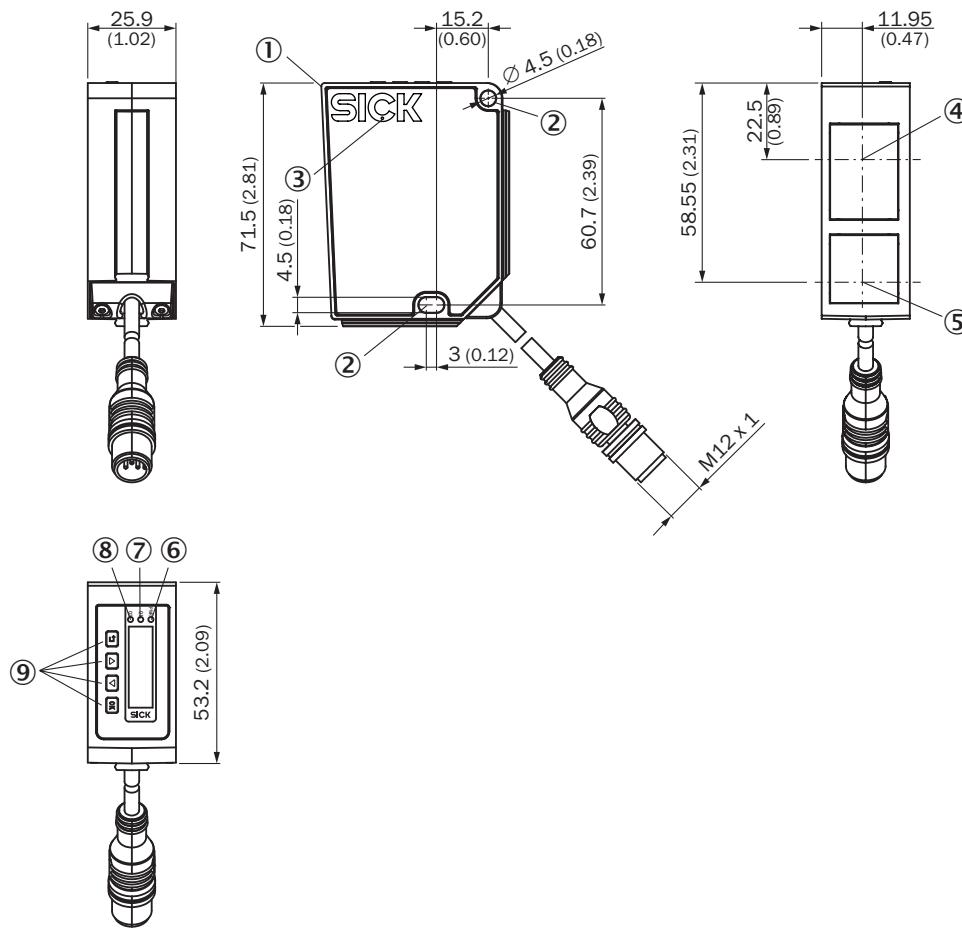
#### Certificates

<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>IO-Link</b>	✓
<b>cTUVus certificate</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

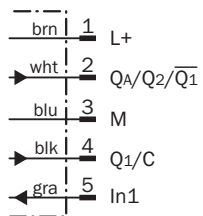
## Dimensional drawing



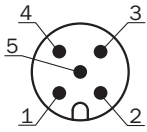
Dimensions in mm (inch)

- ① Zero level
- ② Mounting hole M4
- ③ Ventilation opening (do not cover)
- ④ Center of optical axis, receiver
- ⑤ Center of optical axis, sender
- ⑥ PWR LED green
- ⑦ LED Q1, yellow
- ⑧ LED Q2, yellow
- ⑨ Control elements

## Connection diagram



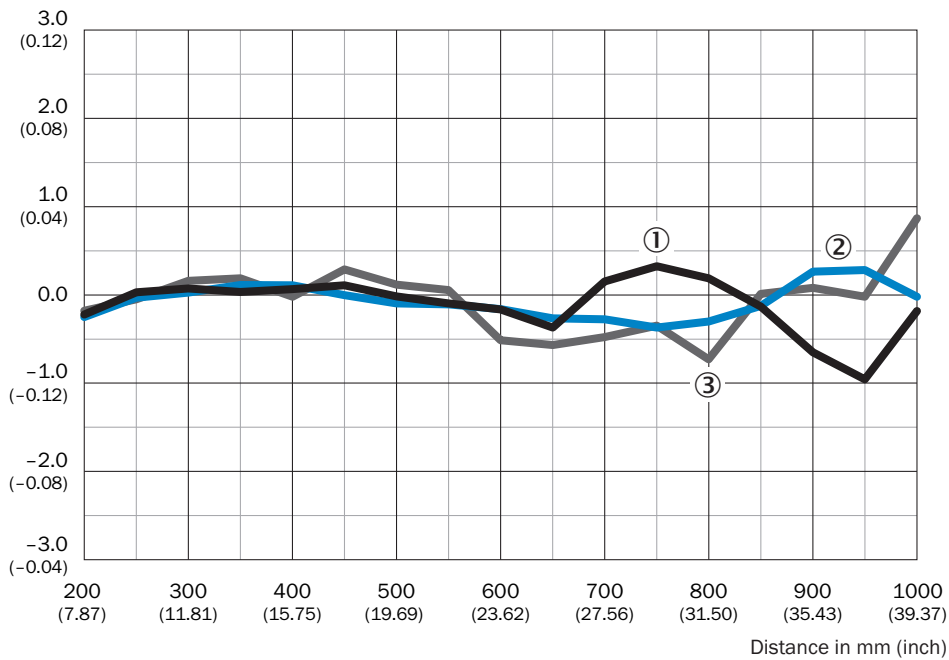
## PIN assignment Connector M12, 5-pin, A-coded



- ① L+
- ② QA/Q2/ $\bar{Q}1$
- ③ M
- ④  $Q_1/C$
- ⑤ In<sub>1</sub>

## Linearity






Typical linearity deviation in mm (inch)



- ① Black 6 % remission
- ② White 90 % remission
- ③ Stainless steel

## Recommended accessories

Other models and accessories → [www.sick.com/OD1000](http://www.sick.com/OD1000)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Stainless-steel mounting bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel</li> </ul>	BEF-WN-OD1000	4089813
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
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> 0.6 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- C60VB5XLEAX	2145570
	<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> 3 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>	YF2A15-030VB5XLEAX	2145572

## 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)