

# OD5000

The expert for high performance measurement

**DISPLACEMENT MEASUREMENT SENSORS**

**SICK**  
Sensor Intelligence.

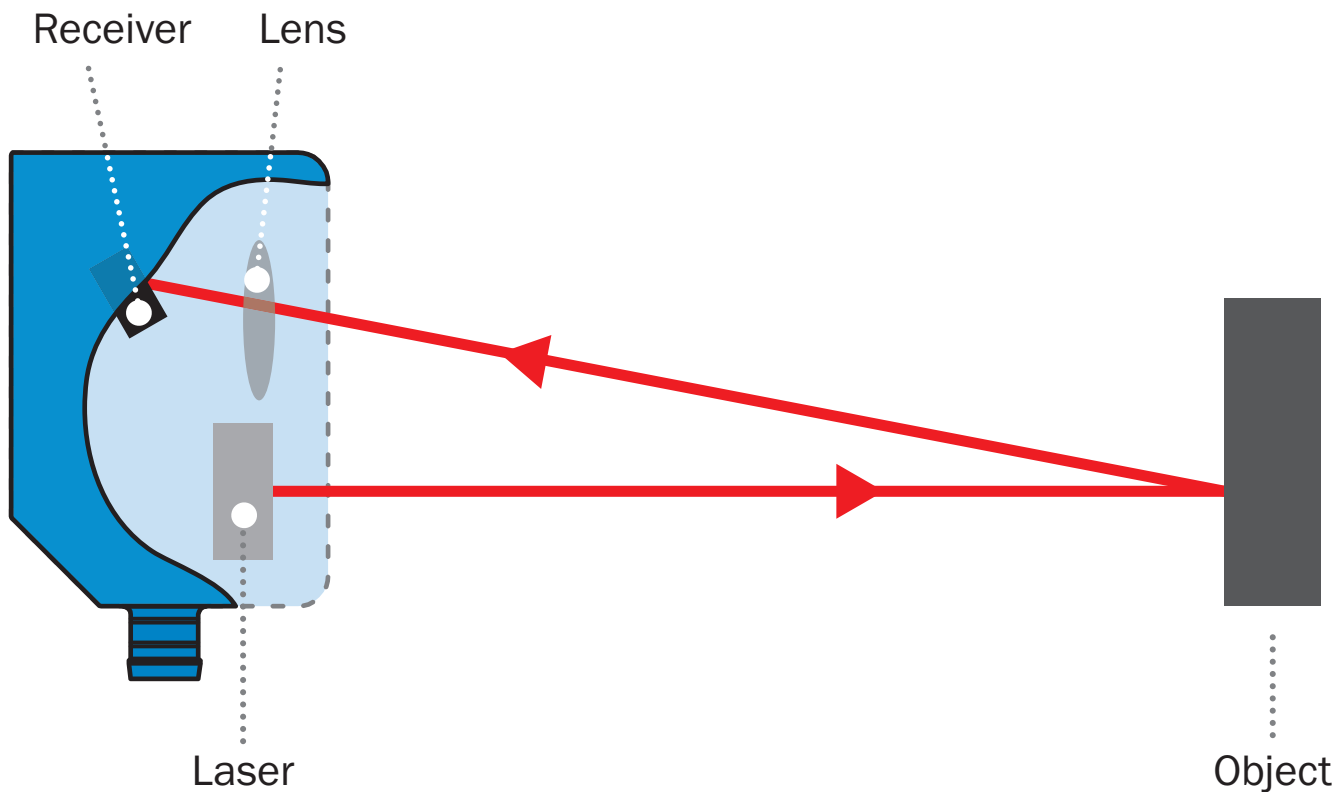
### Advantages



### Precision meets quality

With expert-developed intelligent measurement technology which proves its worth in industrial applications time and time again, SICK offers the solution to any challenge which demands maximum measurement accuracy and quality. A pioneering spirit founded on our years of experience and our own innovations in optical sensor technology. We ensure efficient processes while fulfilling the demands of even complex measuring tasks – regardless of surface, diameter, thickness, or width, and regardless of whether an object is to be positioned or measured. This is how we ensure that your products are every bit as perfect as you want them to be. Moreover, SICK's measurement technology supports quality assurance processes and delivers cost-saving benefits. Have a look on [www.sick.com/measurement-sensors](https://www.sick.com/measurement-sensors)

A point of light is projected onto the measuring object. The light reflected is captured by a light-sensitive receiver at a specific angle. Based on the angle between the send and receive direction, the position of the object is then triangulated (from the Latin “triangulum” = triangle).





## Simple and cost-effective solution with Ethernet interface directly in the sensor head

Thanks to the Ethernet interface installed in the sensor head, quick and direct communication is possible via TCP/IP and UDP/IP protocols. The integration of an external amplifier or evaluation unit is not necessary. However, the OD5000 can be connected to the AOD1 evaluation unit as an option to make thickness measurements with two sensor heads.

### OD5000 – displacement measurement sensor



Measuring frequencies of up to 80 kHz for increased measurement performance even at high speeds



Easy parameterization and commissioning via web server interface



Small light beam diameter for measurement of the smallest objects and recesses

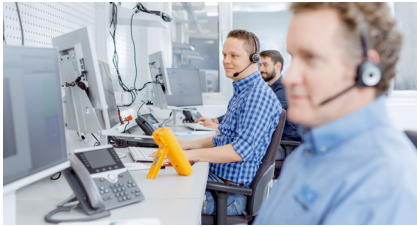


**Quick communication for maximum productivity and product quality**

## SICK LifeTime Services

SICK's services increase machine and plant productivity, enhance the safety of people all over the world, provide a solid foundation for a sustainable business operation, and protect investment goods. In addition to its usual consulting services, SICK provides direct on-site support during the conceptual design and commissioning phases as well as during operation.

The range of services not only covers aspects like maintenance and inspection, but also includes performance checks as well as upgrades and retrofits. Modular or customized service contracts extend the service life of plants and therefore increase their availability. If faults occur or limit values are exceeded, these are detected at all times by the corresponding sensors and systems.



### **Consulting and design**

Application-specific advice on the product, its integration and the application itself.



### **commissioning and maintenance**

Application-optimized and sustainable — thanks to professional commissioning and maintenance by a trained SICK service technician.



### **service contracts**

Extended warranty, SICK Remote Service, 24-hour helpdesk, maintenance, availability guarantees and other modular components can be individually combined on request.



### Technical data overview

<b>Measuring range</b>	14 mm ... 190 mm (depending on type)
<b>Linearity</b>	$\pm 1 \mu\text{m}$ ... $\pm 32 \mu\text{m}$ (depending on type)
<b>Repeatability</b>	0.01 $\mu\text{m}$ 0.05 $\mu\text{m}$ 0.1 $\mu\text{m}$ 0.2 $\mu\text{m}$
<b>Response time</b>	$\geq 12.5 \mu\text{s}$
<b>Output time</b>	$\geq 0.0125 \text{ ms}$
<b>Measuring frequency</b>	$\leq 80 \text{ kHz}$
<b>Digital output</b>	1 ... 3 x PNP/NPN, selectable
<b>Light source</b>	Laser, red
<b>Type of light</b>	Visible red light
<b>Ethernet</b>	✓, TCP/IP, UDP
<b>PROFIBUS DP</b>	✓, optional, over external evaluation unit
<b>Analog output</b>	Number 1 Type Current output
<b>Ambient temperature, operation</b>	$-10 \text{ }^\circ\text{C}$ ... $+50 \text{ }^\circ\text{C}$ , Operating temperature at $V_S = 24 \text{ V}$

### Product description

The OD5000 displacement measurement sensor specializes in high-precision measuring tasks, offering solutions in a wide range of applications. With a measuring frequency of up to 80 kHz, the OD5000 also measures quick and rotating measuring objects with  $\mu\text{m}$ -precision. The innovative analysis algorithm allows stable measurements with the highest level of repeatability on a wide range of surfaces. What's more, the OD5000 measures the thickness of transparent material with minimal effort with just a sensor head. The Ethernet interface integrated directly in the sensor head ensures quick communication and therefore maximum productivity.

### At a glance

- Measuring frequency up to 80 kHz
- Ethernet interface with TCP/IP protocol directly in the sensor head
- Web server interface for configuration
- Innovative analysis algorithm
- Maximum repeatability for positioning tasks
- Detection and measurement of the smallest indentations or holes

### Your benefits

- Very good measurement performance, even with quick or rotating objects thanks to high measuring frequency
- Simple and cost-effective solution with Ethernet interface and evaluation unit integrated directly in the sensor head
- Sensor is easy to configure via a web server interface
- Reliable edge detection thanks to innovative analysis algorithm
- Increase in product quality due to maximum repeatability
- Reliable detection, even of very small indentations, thanks to precise light spot

### Fields of application

- Glass thickness measurement with just one sensor head
- Measurement of quick and rotating objects
- Precise height positioning
- Quality control while process in underway

### Ordering information

Other models and accessories → [www.sick.com/OD5000](http://www.sick.com/OD5000)

- **Communication interface:** Ethernet, PROFIBUS DP
- **Housing material:** metal
- **Laser class:** 1
- **Type of analog output:** Current output
- **Connection type:** cable with male connector, M12, 8-pin, A-coded, 50 cm
- **Digital output:** 1 ... 3 x PNP/NPN, selectable

Measuring range	Typ. light spot size (distance)	Type	Part no.
110 mm ... 190 mm	120 µm x 4,000 µm	OD5000-C150W40	6063626
	∅ 120 µm	OD5000-C150T40	6063625
14 mm ... 16 mm	30 µm x 1,000 µm	OD5000-C15W01	6063620
	∅ 30 µm	OD5000-C15T01	6063619
25 mm ... 35 mm	30 µm x 1,000 µm	OD5000-C30W05	6063622
	∅ 30 µm	OD5000-C30T05	6063621
65 mm ... 105 mm	70 µm x 2,000 µm	OD5000-C85W20	6063624
	∅ 70 µm	OD5000-C85T20	6063623

## 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)