



## OD Value

Simply accurate measurement

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.

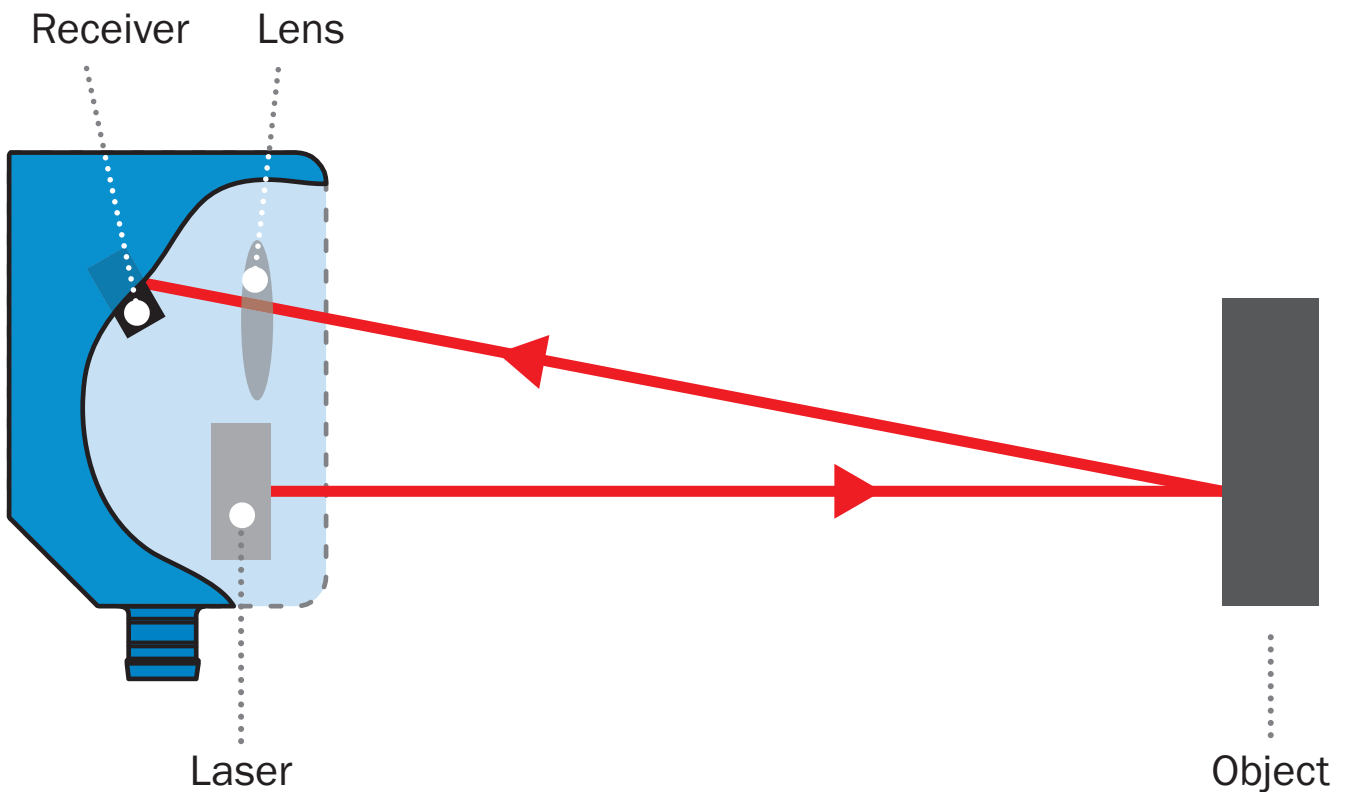
### Advantages

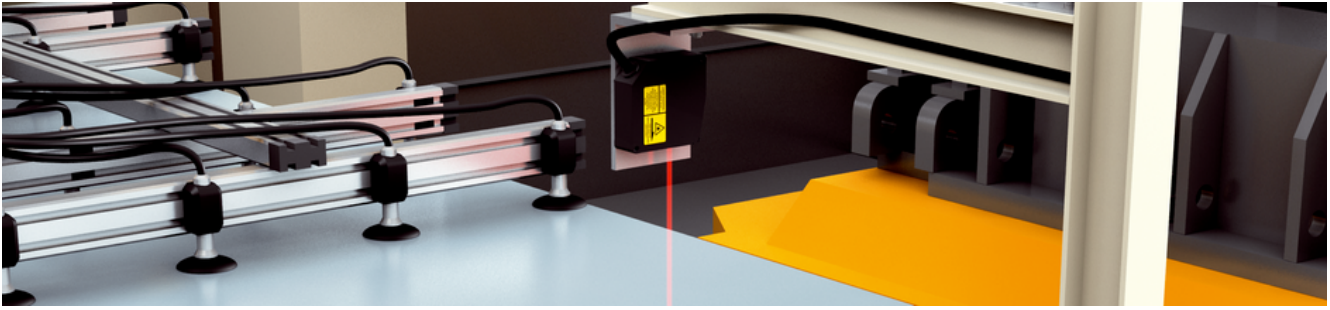


### Precision meets quality

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).





## High flexibility at short distances

Even where measuring distances are short, SICK's displacement measurement sensors are immensely versatile. They meet the very highest requirements placed on quality and precision in a wide range of measuring tasks and applications.



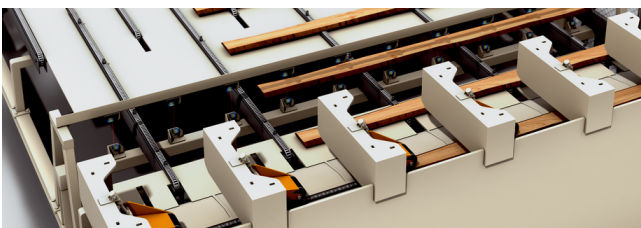
### Checking components

The OD Value distance sensor is lightweight and can therefore be mounted directly on the placement head. It measures the height of the components and application of solder paste in advance and delivers the missing Z data to the 2D vision system of the placement head.



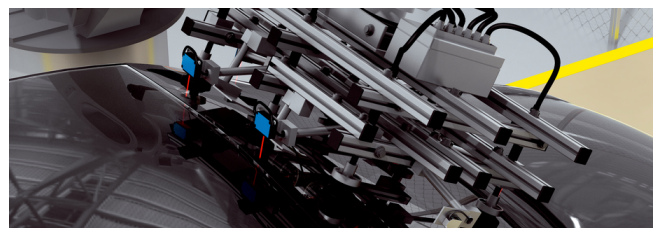
### Positioning dispensing needles with precision

For dispensing processes with high repeatability, the absolute distance between dispensing needle and object is very important. The OD Value displacement measurement sensor measures the distance to the object down to the last micrometer and is very cost effective. Thanks to the light spot with a small diameter, it is perfectly suited for measuring the smallest structures.



### Measurement of the wane

Two highly precise OD Value displacement measurement sensors mounted opposite each other calculate the exact profile of a board and detect the position of the wane. The vision integrator uses the data during scanning and interpolates the differential between the profiles for optimizing the board, which is then trimmed in the saw.



### Precise positioning

Approach the right position every time with a high level of accuracy. With displacement measurement sensors from SICK, grippers and other tools can be positioned exactly without any contact, and with maximum repeatability. Typical applications are "Robot guidance for windshield installation" or "High-accuracy positioning of carriages". Typical industries for the OD Value are robotics, handling and assembly and automotive and parts suppliers.



**OD Value stands for maximum all-round reliability and provides exact measurements of countless different materials and surfaces.**

## 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>	26 mm ... 500 mm (depending on type)
<b>Linearity</b>	$\pm 8 \mu\text{m} \dots \pm 1,200 \mu\text{m}$ (depending on type)
<b>Repeatability</b>	2 $\mu\text{m}$ 5 $\mu\text{m}$ 10 $\mu\text{m}$ 30 $\mu\text{m}$ 60 $\mu\text{m}$ 75 $\mu\text{m}$ 100 $\mu\text{m}$
<b>Response time</b>	$\geq 1 \text{ ms}$
<b>Output time</b>	$\geq 0.5 \text{ ms}$ (depending on type)
<b>Measuring frequency</b>	$\leq 2 \text{ kHz} / \leq 1.33 \text{ kHz}$ (depending on type)
<b>Digital output</b>	1 ... 2 x PNP 1 ... 2 x NPN
<b>Light source</b>	Laser, red
<b>Type of light</b>	Visible red light
<b>Laser class</b>	2
<b>Serial</b>	✓, RS-422
<b>Analog output</b>	Number 1 Type Current output / voltage output (depending on type)
<b>Ambient temperature, operation</b>	$-10 \text{ }^\circ\text{C} \dots +40 \text{ }^\circ\text{C}$

### Product description

The OD Value allows for an easy, precise and economical solution of measuring tasks. It detects even small deviations in dimension, shape, position or excentricity directly in the machine, contactless, precise and during running operation. OD Value convinces with its main features: reliable, user-friendly, effective, universal and efficient. The ideal solution for everyone, who needs to check and verify quality regularly and directly in the process.

### At a glance

- Several measurement ranges from 26 mm ... 34 mm to 100 mm ... 500 mm
- CMOS receiving element for measurement independent of surface
- Easy, LED-based user and teach-in concept
- Wide range of models and a wide range of standard interfaces
- Laser technology for precise measurement of very small objects
- Compact stand-alone device
- Excellent price-performance ratio

### Your benefits

- Reliable measurement independent of surface, minimizes machine downtime
- Extremely simple sensor teach-in makes setup faster and more cost-effective
- Minimal space requirements and less wiring due to its compact, standalone design
- Many measurement ranges and output interfaces make it ideal for cost-effective integration into any production environment
- Low investment costs make consistent, regular quality inspection possible
- Non-contact measurement technology from a safe distance allows the inspection to be carried out directly during the production process
- Wear and damage-free inspection, due to non-contact measurement

### Ordering information

Other models and accessories → [www.sick.com/OD\\_Value](http://www.sick.com/OD_Value)

- **Housing material:** plastic
- **Laser class:** 2

Measuring range	Type of analog output	Connection type	Typ. light spot size (distance)	Digital output	Type	Part no.
100 mm ... 400 mm	-	Cable, 2 m	1.8 mm x 3.5 mm (250 mm)	2 x NPN	OD2-N250W150C2	6036635
				2 x PNP	OD2-P250W150C2	6036643
		Male connector, M12, 8-pin, swivel connector unit	1.8 mm x 3.5 mm (250 mm)	2 x NPN	OD2-N250W150C0	6036639
				2 x PNP	OD2-P250W150C0	6036647
	Current output	Cable, 2 m	1.8 mm x 3.5 mm (250 mm)	2 x NPN	OD2-N250W150I2	6036633
				2 x PNP	OD2-P250W150I2	6036641
		Male connector, M12, 8-pin, swivel connector unit	1.8 mm x 3.5 mm (250 mm)	2 x NPN	OD2-N250W150I0	6036637
				2 x PNP	OD2-P250W150I0	6036645
	Voltage output	Cable, 2 m	1.8 mm x 3.5 mm (250 mm)	2 x NPN	OD2-N250W150U2	6036634
				2 x PNP	OD2-P250W150U2	6036642
		Male connector, M12, 8-pin, swivel connector unit	1.8 mm x 3.5 mm (250 mm)	2 x NPN	OD2-N250W150U0	6036638
				2 x PNP	OD2-P250W150U0	6036646
100 mm ... 500 mm	Current output		1.9 mm x 3.9 mm (300 mm)	2 x PNP	OD2-P300W200I0	6048912
26 mm ... 34 mm	-	Cable, 2 m	0.1 mm x 0.1 mm (30 mm)	2 x NPN	OD2-N30W04C2	6036570
				2 x PNP	OD2-P30W04C2	6036578
		Male connector, M12, 8-pin, swivel connector unit	0.1 mm x 0.1 mm (30 mm)	2 x NPN	OD2-N30W04C0	6036574
				2 x PNP	OD2-P30W04C0	6036582
	Current output	Cable, 2 m	0.1 mm x 0.1 mm (30 mm)	2 x NPN	OD2-N30W04I2	6036568
				2 x PNP	OD2-P30W04I2	6036576
		Male connector, M12, 8-pin, swivel connector unit	0.1 mm x 0.1 mm (30 mm)	2 x NPN	OD2-N30W04I0	6036572
				2 x PNP	OD2-P30W04I0	6036580
	Voltage output	Cable, 2 m	0.1 mm x 0.1 mm (30 mm)	2 x NPN	OD2-N30W04U2	6036569
				2 x PNP	OD2-P30W04U2	6036577
		Male connector, M12, 8-pin, swivel connector unit	0.1 mm x 0.1 mm (30 mm)	2 x NPN	OD2-N30W04U0	6036573
				2 x PNP	OD2-P30W04U0	6036581

Measuring range	Type of analog output	Connection type	Typ. light spot size (distance)	Digital output	Type	Part no.		
40 mm ... 60 mm	–	Cable, 2 m	0.5 mm x 1 mm (50 mm)	2 x NPN	OD2-N50W10C2	6036586		
				2 x PNP	OD2-P50W10C2	6036595		
		Male connector, M12, 8-pin, swivel connector unit	0.5 mm x 1 mm (50 mm)	2 x NPN	OD2-N50W10C0	6036590		
				2 x PNP	OD2-P50W10C0	6036599		
	Current output	Cable, 2 m	0.5 mm x 1 mm (50 mm)	2 x NPN	OD2-N50W10I2	6036584		
				2 x PNP	OD2-P50W10I2	6036592		
		Male connector, M12, 8-pin, swivel connector unit	0.5 mm x 1 mm (50 mm)	2 x NPN	OD2-N50W10I0	6036588		
				2 x PNP	OD2-P50W10I0	6036597		
	Voltage output	Cable, 2 m	0.5 mm x 1 mm (50 mm)	2 x NPN	OD2-N50W10U2	6036585		
				2 x PNP	OD2-P50W10U2	6036593		
		Male connector, M12, 8-pin, swivel connector unit	0.5 mm x 1 mm (50 mm)	2 x NPN	OD2-N50W10U0	6036589		
				2 x PNP	OD2-P50W10U0	6036598		
60 mm ... 180 mm	–	Cable, 2 m	1 mm x 1.5 mm (120 mm)	2 x NPN	OD2-N120W60C2	6036619		
				2 x PNP	OD2-P120W60C2	6036627		
				Male connector, M12, 8-pin, swivel connector unit	1 mm x 1.5 mm (120 mm)	2 x NPN	OD2-N120W60C0	6036623
						2 x PNP	OD2-P120W60C0	6036631
		Current output	Cable, 2 m	1 mm x 1.5 mm (120 mm)	2 x NPN	OD2-N120W60I2	6036617	
					2 x PNP	OD2-P120W60I2	6036625	
			Male connector, M12, 8-pin, swivel connector unit	1 mm x 1.5 mm (120 mm)	2 x NPN	OD2-N120W60I0	6036621	
					2 x PNP	OD2-P120W60I0	6036629	
	Voltage output	Cable, 2 m	1 mm x 1.5 mm (120 mm)	2 x NPN	OD2-N120W60U2	6036618		
				2 x PNP	OD2-P120W60U2	6036626		
		Male connector, M12, 8-pin, swivel connector unit	1 mm x 1.5 mm (120 mm)	2 x NPN	OD2-N120W60U0	6036622		
				2 x PNP	OD2-P120W60U0	6036630		
60 mm ... 210 mm	Current output		1 mm x 1.4 mm (135 mm)	2 x PNP	OD2-P135W75I0	6048894		
65 mm ... 105 mm	–	Cable, 2 m	0.8 mm x 1.3 mm (85 mm)	2 x NPN	OD2-N85W20C2	6036603		
				2 x PNP	OD2-P85W20C2	6036611		
				Male connector, M12, 8-pin, swivel connector unit	0.8 mm x 1.3 mm (85 mm)	2 x NPN	OD2-N85W20C0	6036607
						2 x PNP	OD2-P85W20C0	6036615
		Current output	Cable, 2 m	0.8 mm x 1.3 mm (85 mm)	2 x NPN	OD2-N85W20I2	6036601	
					2 x PNP	OD2-P85W20I2	6036609	
			Male connector, M12, 8-pin, swivel connector unit	0.8 mm x 1.3 mm (85 mm)	2 x NPN	OD2-N85W20I0	6036605	
					2 x PNP	OD2-P85W20I0	6036613	
	Voltage output	Cable, 2 m	0.8 mm x 1.3 mm (85 mm)	2 x NPN	OD2-N85W20U2	6036602		
				2 x PNP	OD2-P85W20U2	6036610		
		Male connector, M12, 8-pin, swivel connector unit	0.8 mm x 1.3 mm (85 mm)	2 x NPN	OD2-N85W20U0	6036606		
				2 x PNP	OD2-P85W20U0	6036614		

- **Communication interface:** Serial
- **Housing material:** plastic
- **Laser class:** 2

Measuring range	Connection type	Typ. light spot size (distance)	Digital output	Type	Part no.
100 mm ... 400 mm	Cable, 2 m	1.8 mm x 3.5 mm (250 mm)	1 x NPN	OD2-N250W150A2	6036636
			1 x PNP	OD2-P250W150A2	6036644
	Male connector, M12, 8-pin, swivel connector unit	1.8 mm x 3.5 mm (250 mm)	1 x NPN	OD2-N250W150A0	6036640
			1 x PNP	OD2-P250W150A0	6036648
26 mm ... 34 mm	Cable, 2 m	0.1 mm x 0.1 mm (30 mm)	1 x NPN	OD2-N30W04A2	6036571
			2 x PNP	OD2-P30W04A2	6036579
	Male connector, M12, 8-pin, swivel connector unit	0.1 mm x 0.1 mm (30 mm)	1 x NPN	OD2-N30W04A0	6036575
			1 x PNP	OD2-P30W04A0	6036583
40 mm ... 60 mm	Cable, 2 m	0.5 mm x 1 mm (50 mm)	1 x NPN	OD2-N50W10A2	6036587
			1 x PNP	OD2-P50W10A2	6036596
	Male connector, M12, 8-pin, swivel connector unit	0.5 mm x 1 mm (50 mm)	1 x NPN	OD2-N50W10A0	6036591
			1 x PNP	OD2-P50W10A0	6036600
60 mm ... 180 mm	Cable, 2 m	1 mm x 1.5 mm (120 mm)	1 x NPN	OD2-N120W60A2	6036620
			1 x PNP	OD2-P120W60A2	6036628
	Male connector, M12, 8-pin, swivel connector unit	1 mm x 1.5 mm (120 mm)	1 x NPN	OD2-N120W60A0	6036624
			1 x PNP	OD2-P120W60A0	6036632
65 mm ... 105 mm	Cable, 2 m	0.8 mm x 1.3 mm (85 mm)	1 x NPN	OD2-N85W20A2	6036604
			1 x PNP	OD2-P85W20A2	6036612
	Male connector, M12, 8-pin, swivel connector unit	0.8 mm x 1.3 mm (85 mm)	1 x NPN	OD2-N85W20A0	6036608
			1 x PNP	OD2-P85W20A0	6036616



## 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)