



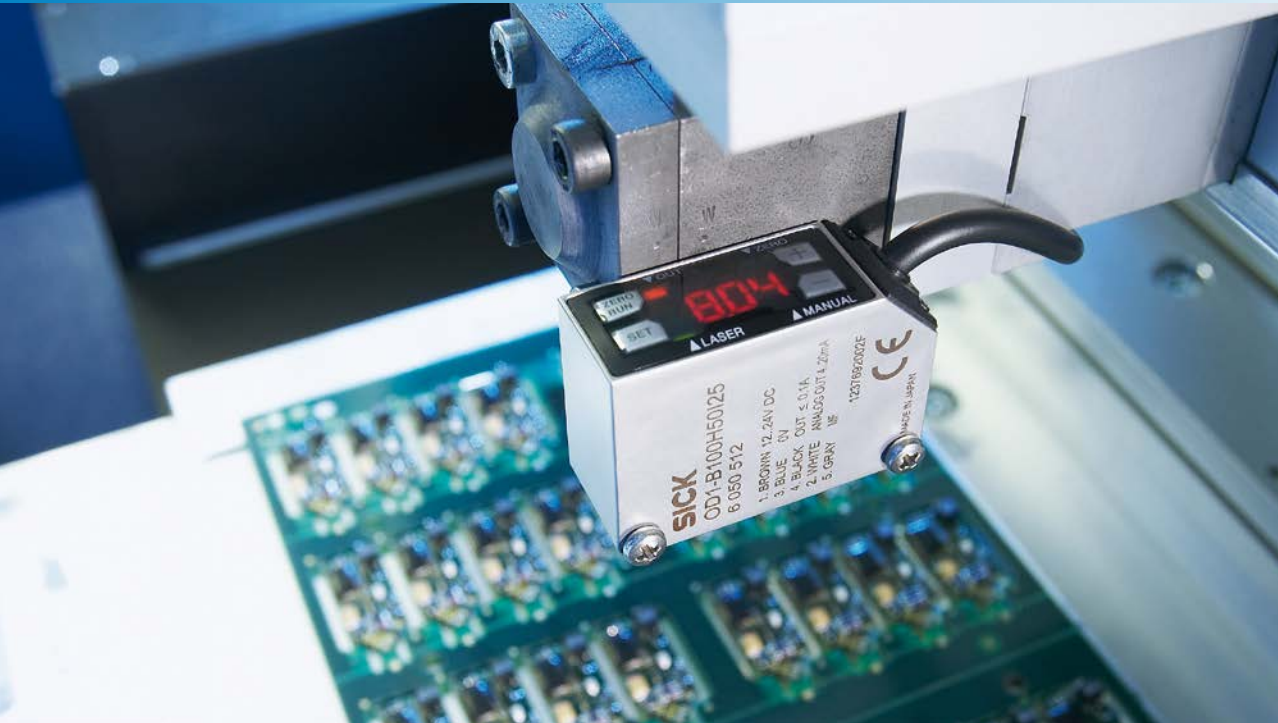
OD Mini

COMPACT, LIGHTWEIGHT SENSOR FOR PRECISE MEASUREMENT

Short range distance sensors (displacement)

SICK
Sensor Intelligence.

OD MINI – THE LIGHTWEIGHT SENSOR IN A COMPACT HOUSING



The OD Mini in original size: 44.4 mm x 31 mm x 17 mm

The new family of OD Mini short range distance sensors from SICK is one of the world's smallest distance sensors regarding display and control elements. Its measurement accuracy in the μm range, high-quality fittings, compact size and low weight are impressive. The OD Mini is available in two housing designs.

OD Mini, stainless steel – The robust sensor

Stainless steel housing for use in harsh conditions



- 44.4 mm x 31 mm x 17 mm
- 70 g
- Connector M8, 4-pin or Cable with connector, M12, 5-pin
- High linearity: up to 10 μm

OD Mini, aluminum – The lightweight sensor

For highly dynamic applications, e.g. robotic arms and grippers



- 44.4 mm x 31 mm x 17 mm
- 40 g
- Connector M8, 4-pin or Cable with connector, M12, 5-pin
- High linearity: up to 10 μm

Small sensor – great performance

Installation in limited space
thanks to compact housing

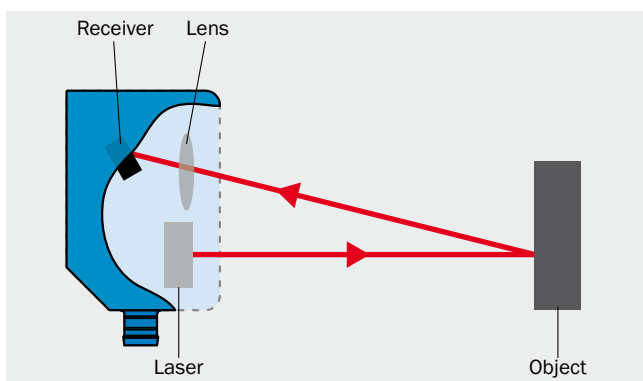
Simple commissioning
using display with control elements

Simple electrical integration
with a variety of interfaces

Saves on acquisition costs
and reduces the amount of cabling
Sensor with integrated electronic
evaluation system

Precise μm measurement and positioning
regardless of brightness and color of the object surface

Technology: Triangulation principle



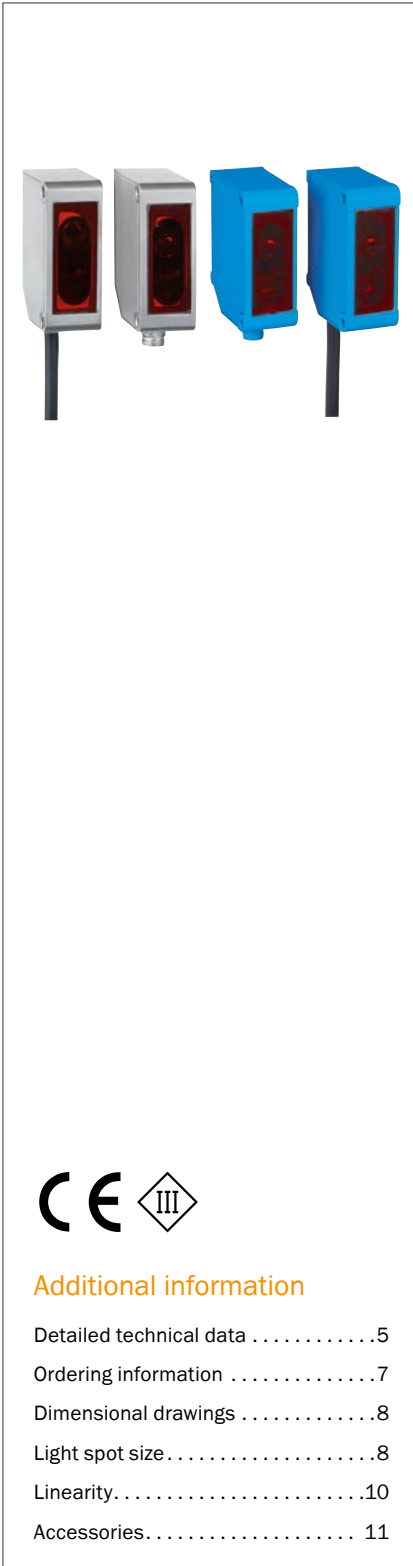
- A point of light is projected onto the object to be measured
- The light reflected is captured by a light-sensitive receiver at a specific angle
- Based on the angle between the send and receive direction, the position of the object is triangulated (lat. Triangulum: triangle)

Typical industries and fields of application



- **Electronics and solar industry**
 - Measurement of electronic components for precise positioning
- **Machine tool and automobile industry**
 - Quality control of manufacturing tolerances
- **Handling and robotics industry**
 - Process control by robot positioning
- **Packaging machinery industry**
 - Classification and sorting (e.g. by length)

COMPACT, LIGHTWEIGHT SENSOR FOR PRECISE MEASUREMENT



Product description

Simple, precise, and economic solutions for measuring tasks; the OD Mini short range distance sensors (displacement) are impressive with their compact and rugged housing, which is available in a lightweight aluminum or a rugged stainless steel. These sensors are equipped with the latest CMOS receiver technology for precise measurement, regardless of the brightness and color of the surface material. The integrated amplifier unit enables the OD Mini to

work on a stand-alone basis. Cabling to an external amplifier unit is no longer an issue. The OD Mini is simple to configure due to its intuitive design and display with four status LEDs. The OD Mini can also be remotely programmed via the external teaching input. The large number of available interfaces also simplifies integration into industrial networks. This ensures the highest possible reliability and precision when solving a wide range of measurement tasks.

At a glance

- Compact, robust housing
- Integrated amplifier unit, no additional unit necessary
- Display and LEDs on device for visualization of current status
- Wide range of interfaces available
- Simple teach-in using display or external teaching input
- CMOS receiver unit for precise, fast measurement in the μm range
- Different measuring ranges enabling measurement from 10 mm up to 250 mm

Your benefits

- Cost-saving commissioning through simple operating concept and display
- Small installation size and low weight also allow use in highly dynamic applications
- Reduction in cabling, as no additional amplifier unit is necessary
- High machine throughput thanks to reliable measurement, regardless of brightness and color of surface
- The wide range of available interfaces enables simple integration into industrial networks
- Optimum performance even at high production speeds



Additional information

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→ www.mysick.com/en/OD_Mini

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Performance

	OD Mini Core	OD Mini Prime
Measuring range	20 mm ... 50 mm 50 mm ... 250 mm	10 mm ... 20 mm 20 mm ... 50 mm 50 mm ... 150 mm
Resolution ¹⁾		
10 mm ... 20 mm	–	1 µm
20 mm ... 50 mm	0.02 mm ^{2) 3) 4)}	6 µm
50 mm ... 150 mm	–	20 µm
50 mm ... 250 mm	0.2 mm ^{2) 4) 5)}	–
Repeatability ^{4) 6)}		
10 mm ... 20 mm	–	3 µm
20 mm ... 50 mm	0.06 mm ³⁾	9 µm
50 mm ... 150 mm	–	30 µm
50 mm ... 250 mm	0.6 mm ⁵⁾	–
Linearity ^{2) 4)}		
10 mm ... 20 mm	–	± 10 µm
20 mm ... 50 mm	–	± 30 µm
50 mm ... 150 mm	–	± 100 µm
Response time ⁷⁾	2 ms / 4 ms / 8 ms / 16 ms / auto	
Measuring frequency	2 kHz / 1 kHz / 500 Hz / 250 Hz / auto	
Light source	Laser, red	
Laser class ⁸⁾		
10 mm ... 20 mm	–	1 (EN 60825-1)
20 mm ... 50 mm	1 (EN 60825-1)	
50 mm ... 150 mm	–	1 (EN 60825-1)
50 mm ... 250 mm	2 (EN 60825-1)	–
Additional function	Averaging 1 ... 512x Automatic or manual sensitivity adjustment Teach-in of switching outputs Switching output invertible Switching mode: window (Wnd) Switching mode: distance to object (DtO) Switching mode: object between sensor and background (ObSB) Multifunctional input: laser-off / external teach-in / trigger – Teach-in of analog outputs	

¹⁾ Averaging function set to: 512.²⁾ Measurement on 90 % remission (ceramic, white)³⁾ Hysteresis 0.08 mm.⁴⁾ For best performance consider warm up time ≤ 5 minutes.⁵⁾ Hysteresis 0.8 mm.⁶⁾ Constant ambient conditions.⁷⁾ At fixed sensitivity setting and averaging = 1. With automatic sensitivity setting and sample rating 500 µs: 2 ... 7.5 ms response time/sample rating 1,000 µs: 4 ... 15 ms response time.⁸⁾ Wavelength: 655 nm, max. output: 390 µW (laser class 1) / < 1 mW (laser class 2)

Interfaces

Multifunctional input (MF) ¹⁾	1 x
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¹⁾ MF can be used as laser-off, trigger, external teach-in or deactivated.

Mechanics/electronics

	OD Mini Core	OD Mini Prime
Supply voltage V_s	DC 12 V (-5 %) ... DC 24 V (+10 %)	
Power consumption ¹⁾	≤ 1.92 W	
Warm-up time	≤ 5 min	
Indication	4-digit 7-segment display (plus 4 LEDs for status display)	
Control elements	4 buttons	
Weight		
Aluminum housing with PPSU lens	40 g	
Stainless steel housing with PPSU lens	-	70 g
Dimensions	44.4 mm x 31 mm x 17 mm	

¹⁾ Without load, with current output.

Ambient data

Enclosure rating	IP 67
Protection class	III
Ambient temperature	Operation: -10 °C ... +40 °C Storage: -20 °C ... +60 °C
Min. rel. humidity (not condensing)	35 %
Max. rel. humidity (not condensing)	95 %
Temperature drift	± 0.08 % FS/K (FS = Full Scale = Measuring range of sensor)
Typ. ambient light safety	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 lx
Vibration resistance	10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each)
Shock resistance	50 G (x-, y-, z-axis 3 times each)

General notes

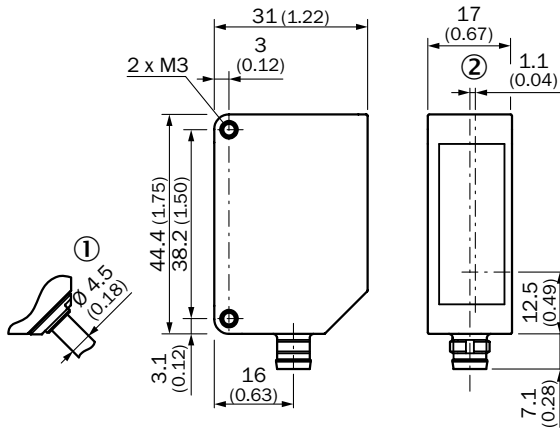
Note	Not free of paint wetting impairment substances
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Ordering information

Sub product family	Housing material	Measurement range	Data interface	Connection type	Switching output	Model name	Part no.
OD Mini Core	Aluminum housing with PPSU lens	20 mm ... 50 mm	-	Male connector M8, 4-pin	1 x PNP/NPN, selectable	OD1-B035C15Q14	6052308
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B035C15Q15	6052309
		50 mm ... 250 mm	-	Male connector M8, 4-pin	1 x PNP/NPN, selectable	OD1-B150F0AQ14	6052326
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B150F0AQ15	6052327
OD Mini Prime	Stainless steel housing with PPSU lens	10 mm ... 20 mm	1 x 4 mA ... 20 mA (< 300 Ω)	Male connector M8, 4-pin	-	OD1-B015H05I14	6050495
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B015H05I25	6050496
			1 x 0 V ... 10 V (> 10 kΩ)	Male connector M8, 4-pin	-	OD1-B015H05U14	6050497
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B015H05U25	6050498
		20 mm ... 50 mm	1 x 4 mA ... 20 mA (< 300 Ω)	Male connector M8, 4-pin	-	OD1-B035H15I14	6050503
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B035H15I25	6050504
			1 x 0 V ... 10 V (> 10 kΩ)	Male connector M8, 4-pin	-	OD1-B035H15U14	6050505
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B035H15U25	6050506
		50 mm ... 150 mm	1 x 4 mA ... 20 mA (< 300 Ω)	Male connector M8, 4-pin	-	OD1-B100H50I14	6050511
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B100H50I25	6050512
			1 x 0 V ... 10 V (> 10 kΩ)	Male connector M8, 4-pin	-	OD1-B100H50U14	6050513
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B100H50U25	6050514
	Aluminum housing with PPSU lens	10 mm ... 20 mm	1 x 4 mA ... 20 mA (< 300 Ω)	Male connector M8, 4-pin	-	OD1-B015C05I14	6050519
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B015C05I25	6050520
		20 mm ... 50 mm	1 x 4 mA ... 20 mA (< 300 Ω)	Male connector M8, 4-pin	-	OD1-B035C15I14	6050523
				Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B035C15I25	6050524
50 mm ... 150 mm		1 x 4 mA ... 20 mA (< 300 Ω)	Male connector M8, 4-pin	-	OD1-B100C50I14	6050527	
			Cable with connector M12, 5-pin, 30 cm	1 x PNP/NPN, selectable	OD1-B100C50I25	6050528	

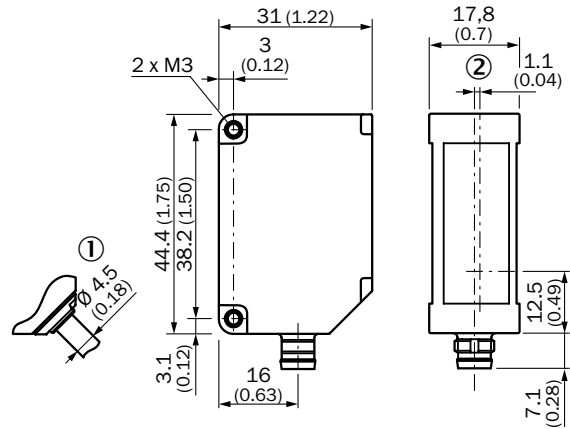
Dimensional drawings (Dimensions in mm (inch))

Stainless steel housing



- ① Variant with 30 cm cable with M12, 5-pin connector
- ② Optical axis

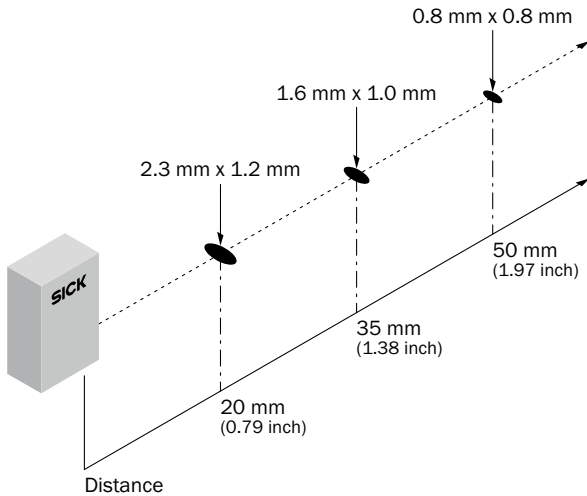
Aluminum housing



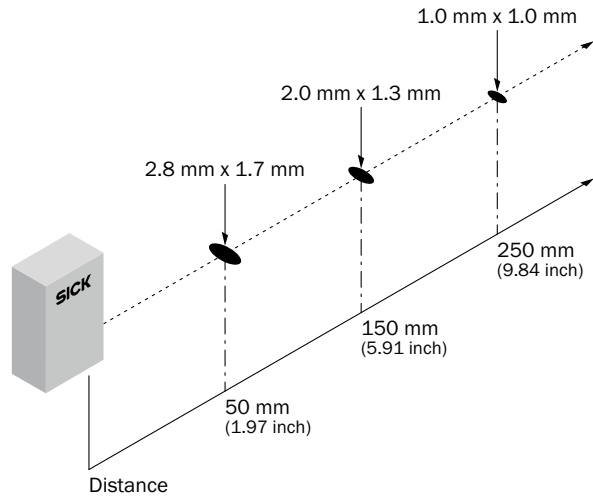
- ① Variant with 30 cm cable with M12, 5-pin connector
- ② Optical axis

Light spot size

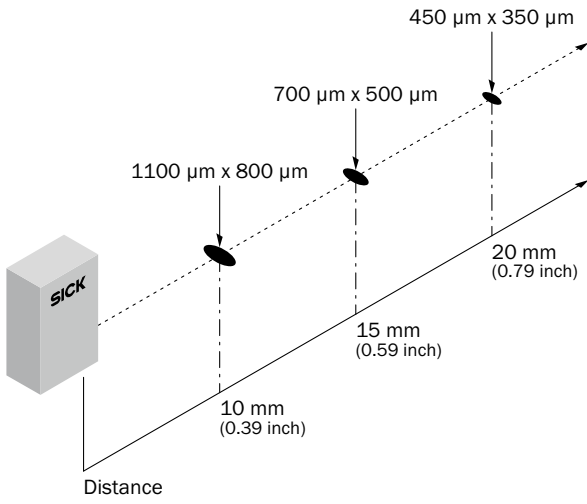
OD Mini Core
20 mm ... 50 mm



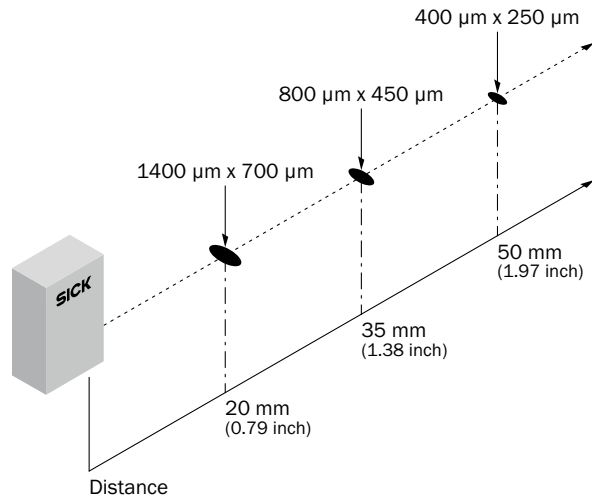
OD Mini Core
50 mm ... 250 mm



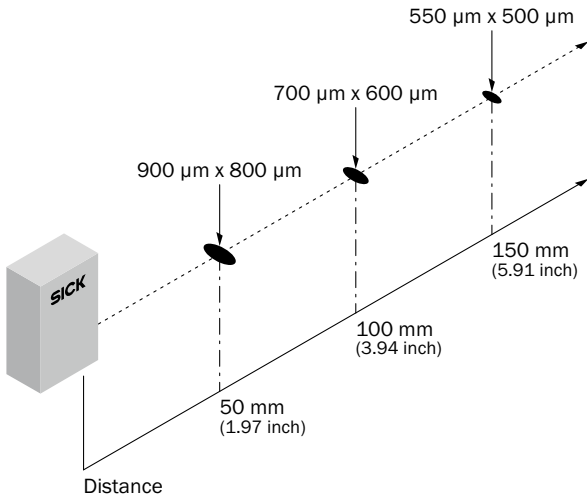
OD Mini Prime
10 mm ... 20 mm



OD Mini Prime
20 mm ... 50 mm

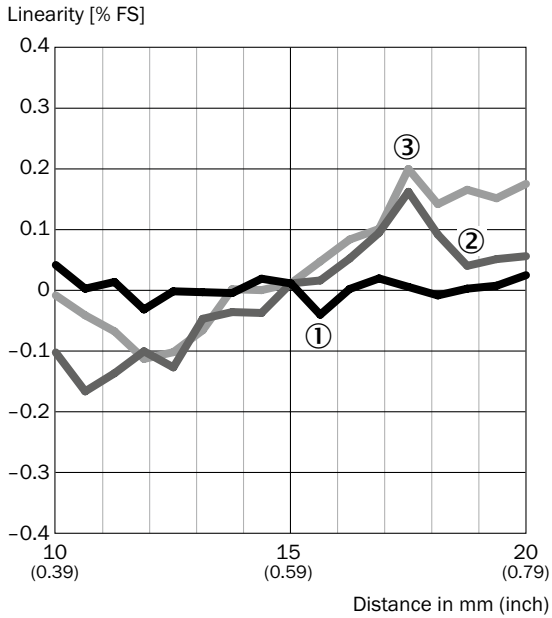


OD Mini Prime
50 mm ... 150 mm



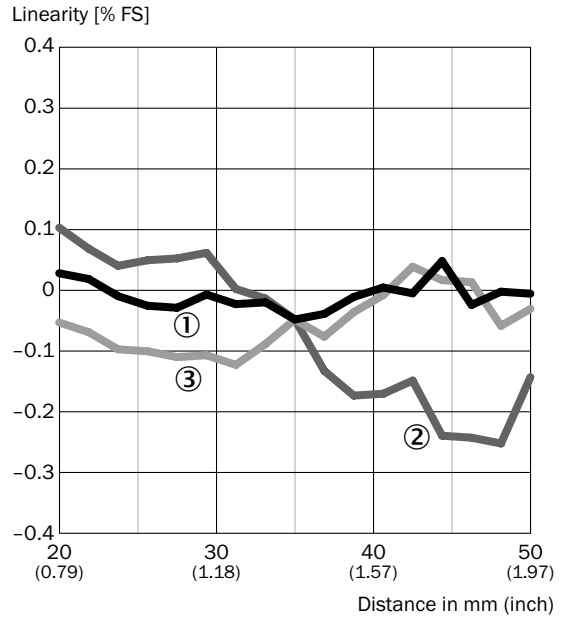
Linearity

OD Mini Prime
10 mm ... 20 mm



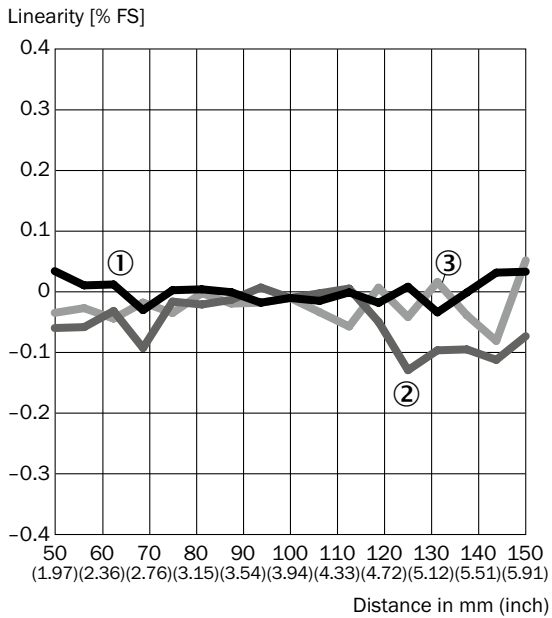
- ① White ceramic
- ② Stainless steel
- ③ Black rubber

OD Mini Prime
20 mm ... 50 mm



- ① White ceramic
- ② Stainless steel
- ③ Black rubber

OD Mini Prime
50 mm ... 150 mm





- ① White ceramic
- ② Stainless steel
- ③ Black rubber

Accessories





Mounting systems

Mounting brackets/plates

	Brief description	Type	Part no.	OD Mini male connector	OD Mini cable with connector
	Mounting bracket, stainless steel, for wall installation, no alignment bracket	BEF-OD1-A	5328343	●	●
	Mounting bracket, stainless steel, no alignment bracket	BEF-OD1-B	5328344	-	●

Connection systems

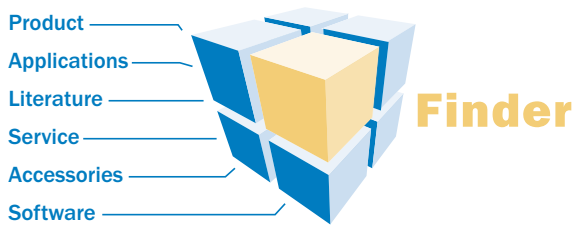
Plug connectors and cables

	Connection type head A	Connection type head B	Cable	Cable length	Type	Part no.	OD Mini male connector	OD Mini cable with connector
	Female connector, M8, 4-pin, straight	Cable	PVC, unshielded	1.5 m	DOL-0804-G1M5	6049343	●	-
				2 m	DOL-0804-G02M	6009870	●	-
				2.5 m	DOL-0804-G2M5	6049344	●	-
				3 m	DOL-0804-G03M	6049342	●	-
				5 m	DOL-0804-G05M	6009872	●	-
				10 m	DOL-0804-G10M	6010754	●	-
				15 m	DOL-0804-G15M	6035232	●	-
				20 m	DOL-0804-G20M	6029109	●	-
				30 m	DOL-0804-G30M	6029110	●	-
	Female connector, M8, 4-pin, angled	Cable	PUR, halogen-free, drag chain use, unshielded	2 m	DOL-0804-G02MC	6025894	●	-
				5 m	DOL-0804-G05MC	6025895	●	-
				10 m	DOL-0804-G10MC	6025896	●	-
				15 m	DOL-0804-G15MC	6038622	●	-
	Female connector, M8, 4-pin, angled	Cable	PVC, unshielded	2 m	DOL-0804-W02M	6009871	●	-
				5 m	DOL-0804-W05M	6009873	●	-
				10 m	DOL-0804-W10M	6010755	●	-
	Female connector, M8, 4-pin, angled	Cable	PUR, halogen-free, drag chain use, unshielded	2 m	DOL-0804-W02MC	6025897	●	-
				5 m	DOL-0804-W05MC	6025898	●	-
				10 m	DOL-0804-W10MC	6025899	●	-

	Connection type head A	Connection type head B	Cable	Cable length	Type	Part no.	OD Mini male connector	OD Mini cable with connector					
 <p>Illustration may differ</p>	Female connector, M12, 5-pin, straight	Cable	PVC, unshielded	2 m	DOL-1205-G02M	6008899	-	●					
				5 m	DOL-1205-G05M	6009868	-	●					
				10 m	DOL-1205-G10M	6010544	-	●					
					PUR, halogen-free, unshielded	2 m	DOL-1205-G02MC	6025906	-	●			
						5 m	DOL-1205-G05MC	6025907	-	●			
						10 m	DOL-1205-G10MC	6025908	-	●			
								PUR, halogen-free, shielded	5 m	DOL-1205-G05MAC	6036384	-	●
									10 m	DOL-1205-G10MAC	6036385	-	●
									20 m	DOL-1205-G20MAC	6036386	-	●
	Female connector, M8, 4-pin, straight	-	Unshielded	-	DOS-0804-G	6009974	●	-					
	Female connector, M8, 4-pin, angled	-	Unshielded	-	DOS-0804-W	6009975	●	-					
	Female connector, M12, 5-pin, straight	-	Unshielded	-	DOS-1205-G	6009719	-	●					
	Female connector, M12, 5-pin, angled	-	Unshielded	-	DOS-1205-W	6009720	-	●					

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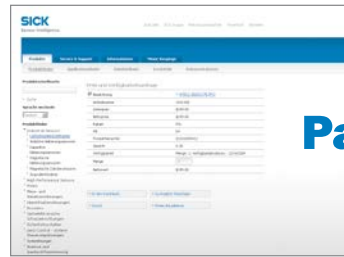


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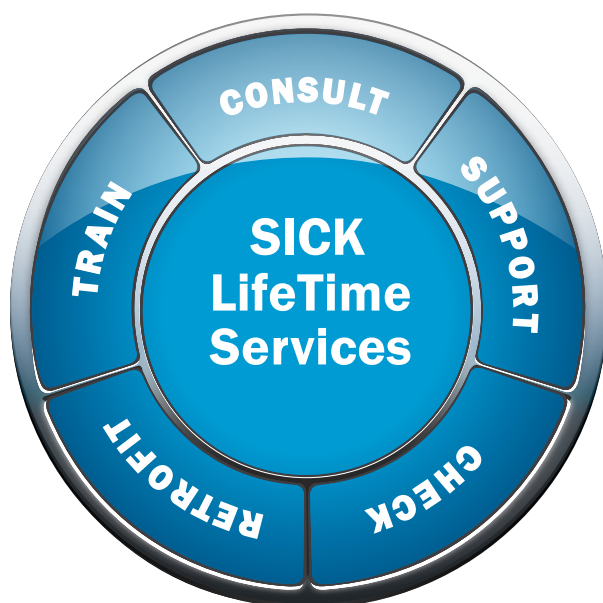
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SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for factory, logistics, and process automation. With more than 6,000 employees and over 40 subsidiaries worldwide, we are always close to our customers. 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 various 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.

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For us, that is “Sensor Intelligence.”

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