

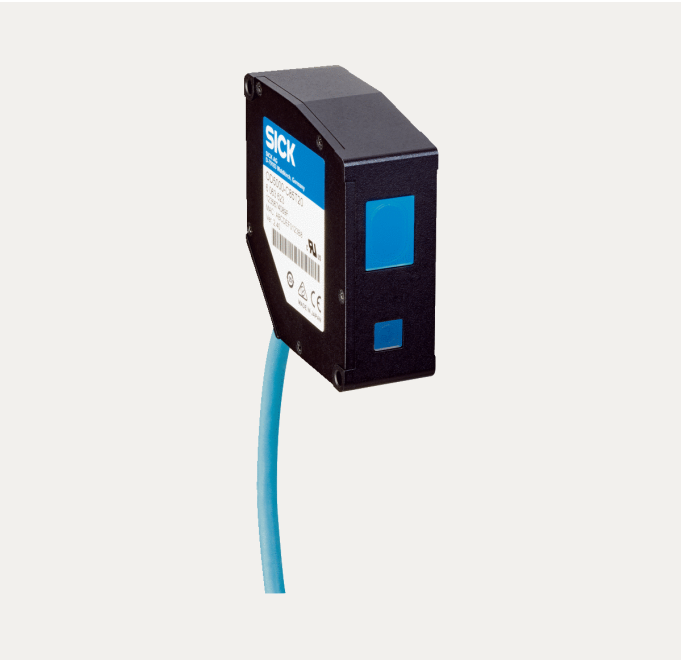
DATA SHEET

OD5000-C85T20

OD5000
Displacement Sensors

SICK

Sensor Intelligence



DISPLACEMENT SENSORS

OD5000-C85T20

ORDERING INFORMATION

Type	part no.
OD5000-C85T20	6063623

Further device versions and accessories at www.sick.com/OD5000



DETAILED TECHNICAL DATA

FEATURES

Measuring range	65 mm ... 105 mm ¹⁾
Repeatability	0.1 µm ^{2) 3)}
Linearity	Diffuse ± 7.2 µm, Near side ²⁾ Diffuse ± 12 µm, Far side ²⁾ Specular ± 6 µm, Near side Specular ± 6 µm, Far side
Response time	≥ 0.0125 ms ^{4) 5)}
Measuring frequency	≤ 80 kHz ⁶⁾
Output time	≥ 0.0125 ms
Emitted beam	Light source Laser, red Typ. light spot size (distance) Ø 70 µm
Key laser figures	Normative reference IEC 60825-1:2014, EN 60825-1:2014 Laser class 1 ⁷⁾ ⁸⁾
Special task	Thickness measurement of transparent material

¹⁾ If there are reflections, the measuring range is reduced to 71.5 ... 91.5 mm.

²⁾ Measurement on 60 % remission (ceramic, white).

³⁾ Set average: 65536, median: 31, response time: 50 µs, constant application parameters.

⁴⁾ At 0.0125 ms, measurement is only possible within a sub-range.

⁵⁾ Dependent on the set average or sensitivity.

⁶⁾ At 80 kHz, measurement is only possible in a sub-area.

⁷⁾ Visible, wavelength: 655 nm, max. power: 0.39 mW.

⁸⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

Thickness measurement of transparent material	0.5 mm ... 2 mm
Safety-related parameters	
MTTF _D	61 years
DC _{avg}	0%

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INTERFACES

Ethernet	✓, TCP/IP, UDP
Digital input	In ₁ Can be used as laser off, external teach-in, or deactivated
Digital output	Number 1 ... 3 ¹⁾ Type PNP/NPN, selectable
Analog output	Number 1 Type Current output Function Optional over evaluation unit AOD1 Current 4 mA ... 20 mA, ≤ 300 Ω

¹⁾ Optional over evaluation unit AOD1.

ELECTRONICS

Supply voltage U _s	DC 12 V ... 24 V, ± 10%, including residual ripple
Power consumption	180 mA, at 24 V
Warm-up time	< 10 min
Display	Status LEDs
Enclosure rating	IP67
Protection class	III (EN 50178)
Connection type	Cable with male connector, M12, 8-pin, A-coded, 50 cm

MECHANICS

Dimensions (W x H x D)	25.9 mm x 71.5 mm x 53.2 mm
Housing material	Metal (Aluminum die cast)
Window material	Plastic (PMMA)
Weight	280 g

AMBIENT DATA

Ambient temperature, operation	-10 °C ... +50 °C, Operating temperature at V _s = 24 V
Ambient temperature, storage	-20 °C ... +60 °C
Relative air humidity (non-condensing)	35 % ... 85 %

¹⁾ With constant object movement in the measuring range.

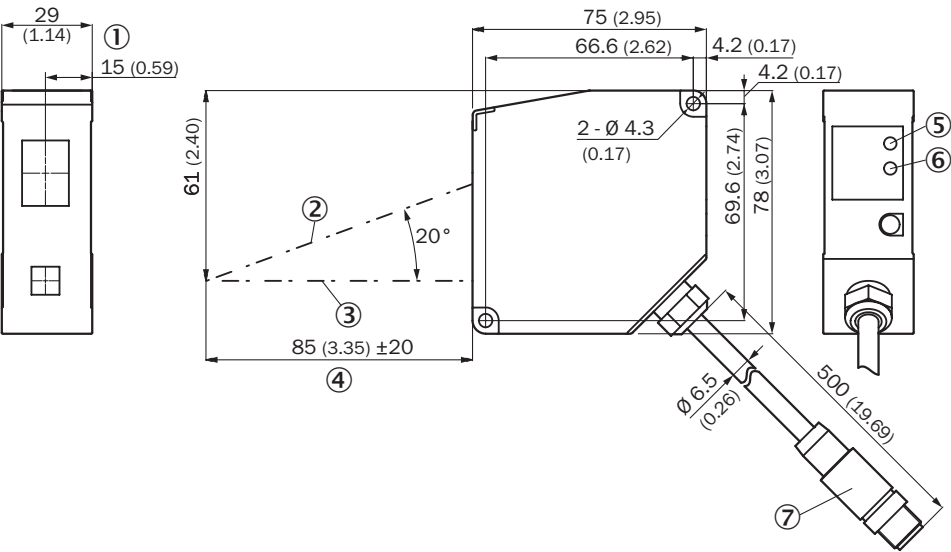
Temperature drift	± 0.01 % FS/K at -10 °C ... +40 °C (FS = Full Scale = sensor measuring range) ± 0.03 % FS/K at +40 °C ... +50 °C (FS = Full Scale = sensor measuring range)
Typ. Ambient light immunity	Artificial light: ≤ 3,000 lx ¹⁾ Sunlight: ≤ 10,000 lx
Vibration resistance	EN 60068-2-6, EN 60068-2-64
Shock resistance	EN 60068-2-27

¹⁾ With constant object movement in the measuring range.

CERTIFICATES

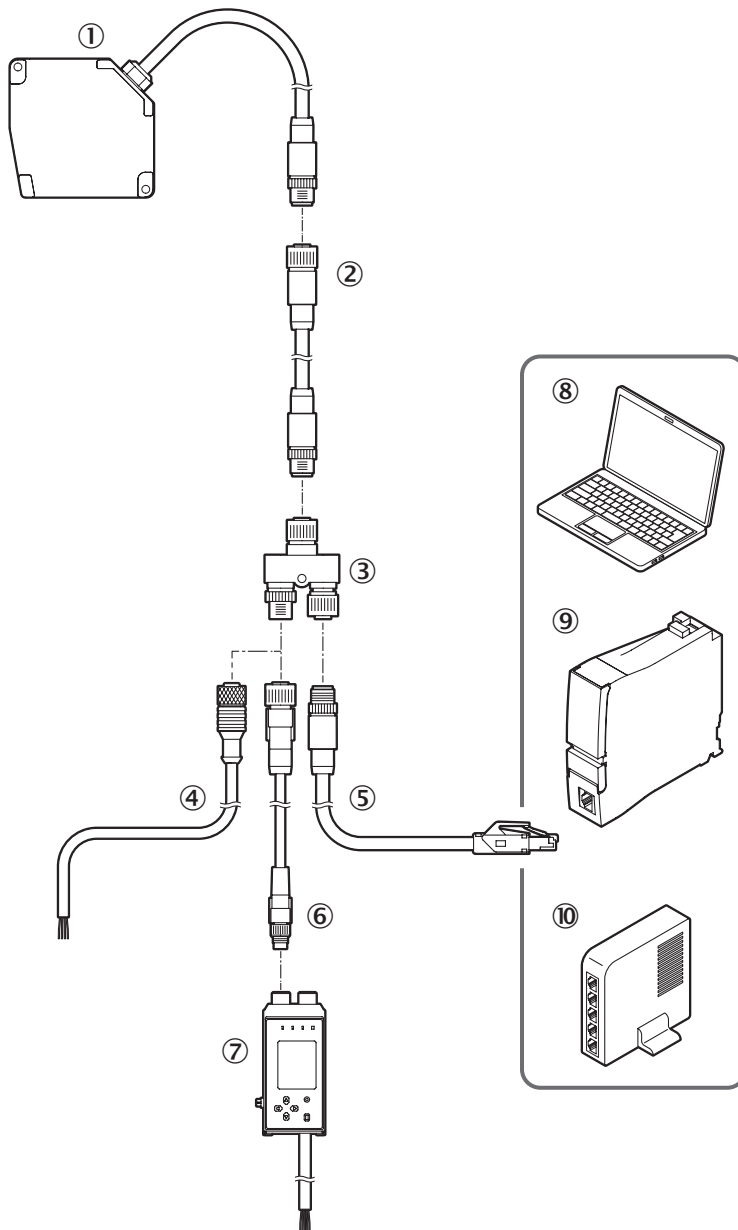
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

DIMENSIONAL DRAWING OD5000-C85X20



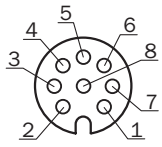
- Dimensions in mm (inch)
- ① reference edge
 - ② optical axis, receiver
 - ③ optical axis, sender
 - ④ measuring range
 - ⑤ Link LED
 - ⑥ status LED
 - ⑦ male connector M12, 8-pin

CONNECTION DIAGRAM



- ① OD5000
- ② Sensor head extension cable
- ③ Y-distribution (included with delivery)
- ④ Cable with open ends
- ⑤ Ethernet Connection cable
- ⑥ AOD1 connection cable, M12, 4-pin to M8, 4-pin
- ⑦ AOD1
- ⑧ PC
- ⑨ PLC
- ⑩ switch

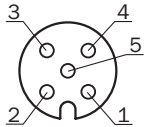
PIN ASSIGNMENT



female connector M12, 8-pin, A-coded

- ① Input (MF) / RS485+
- ② 0 V
- ③ 24 V
- ④ TxD-
- ⑤ RxD+
- ⑥ TxD+
- ⑦ Input (MF) / RS485-
- ⑧ RxD-

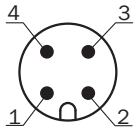
PIN ASSIGNMENT



female connector M12, 5-pin, D-coded

- ① TxD+
- ② RxD+
- ③ TxD-
- ④ RxD-
- ⑤ nc

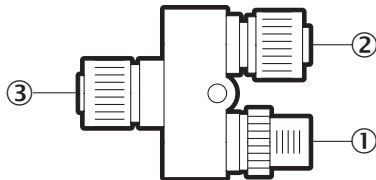
PIN ASSIGNMENT



Connector M12, 4-pin, A-coded

- ① 24 V
- ② Input (MF) / RS485+
- ③ 0 V
- ④ Input (MF) / RS485-

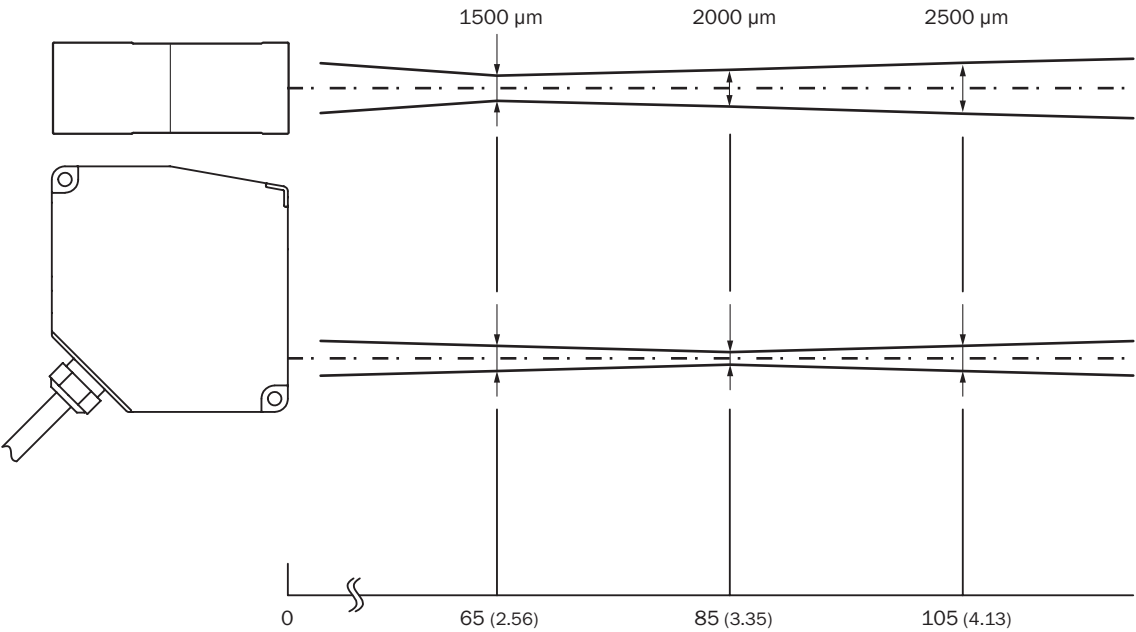
PIN ASSIGNMENT Y-JUNCTIONS



Y-distribution connections

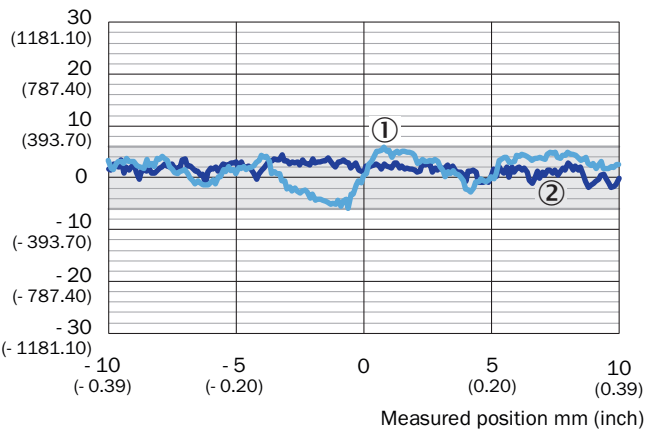
- ① M12, 4-pin, A-coded
- ② M12, 5-pin, D-coded
- ③ M12, 8-pin, A-coded

LIGHT SPOT SIZE



LINEARITY OD5000-C85T20 (REFLECTIVE)

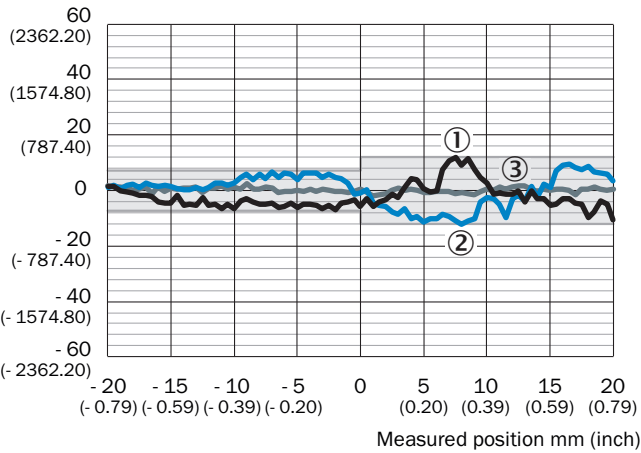
Linearity µm (µin)



- ① Mirror
- ② Glass

LINEARITY OD5000-C85T20 (DIFFUSE)

Linearity μm (μin)



- ① white 60% remission factor
- ② black 9.5% remission factor
- ③ stainless steel

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6063623



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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