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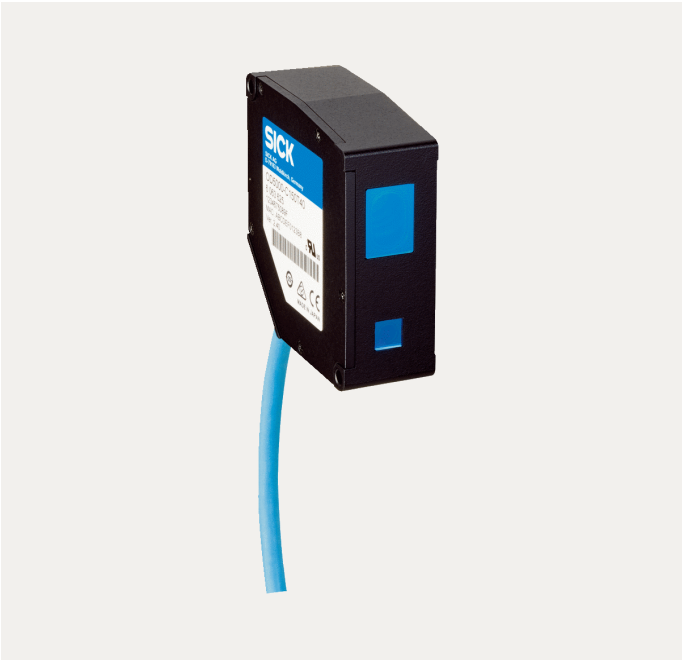
DATA SHEET

OD5000-C150T40

OD5000
Displacement Sensors

SICK Sensor Intelligence



DISPLACEMENT SENSORS

OD5000-C150T40

ORDERING INFORMATION

Type	part no.
OD5000-C150T40	6063625

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

DETAILED TECHNICAL DATA

FEATURES

Measuring range	110 mm ... 190 mm
Repeatability	0.2 µm [1) 2)]
Linearity	Diffuse ± 24 µm, Near side [1)] Diffuse ± 32 µm, Far side [1)] Specular not supported
Response time	≥ 0.0125 ms [3) 4)]
Measuring frequency	≤ 80 kHz [5)]
Output time	≥ 0.0125 ms
Emitted beam	
Light source	Laser, red
Typ. light spot size (distance)	Ø 120 µm
Key laser figures	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	1 [6) 7)]
Thickness measurement of transparent material	Not supported
Safety-related parameters	
$MTTF_D$	61 years
DC_{avg}	0%

[1)] Measurement on 60 % remission (ceramic, white).

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

[3)] At 0.0125 ms, measurement is only possible within a sub-range.

[4)] Dependent on the set average or sensitivity.

[5)] At 80 kHz, measurement is only possible in a sub-area.

[6)] Visible, wavelength: 655 nm, max. power: 0.39 mW.

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

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_B	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 %
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

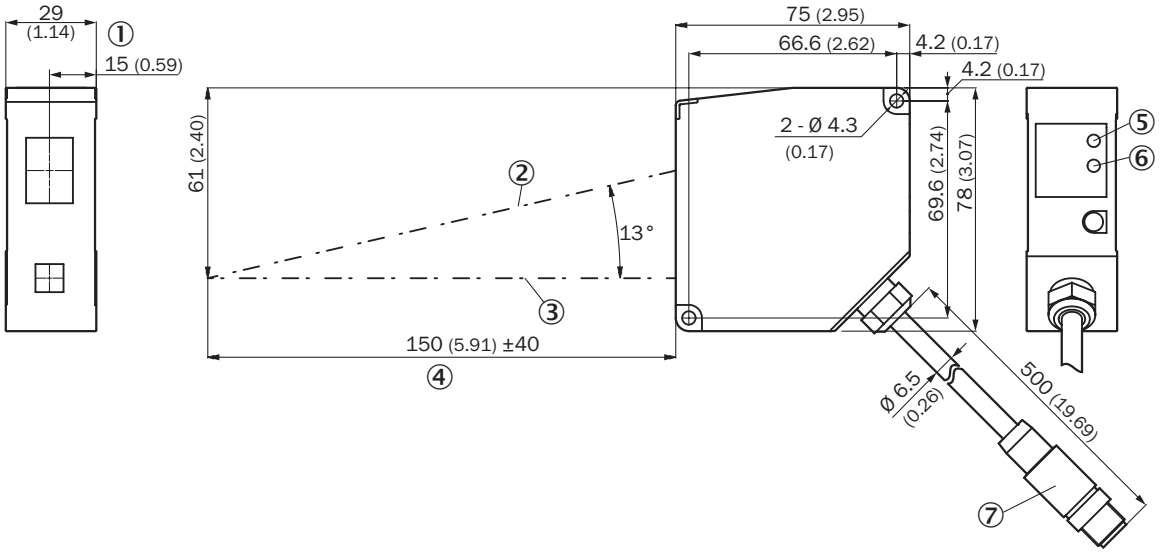
[1] With constant object movement in the measuring range.

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓

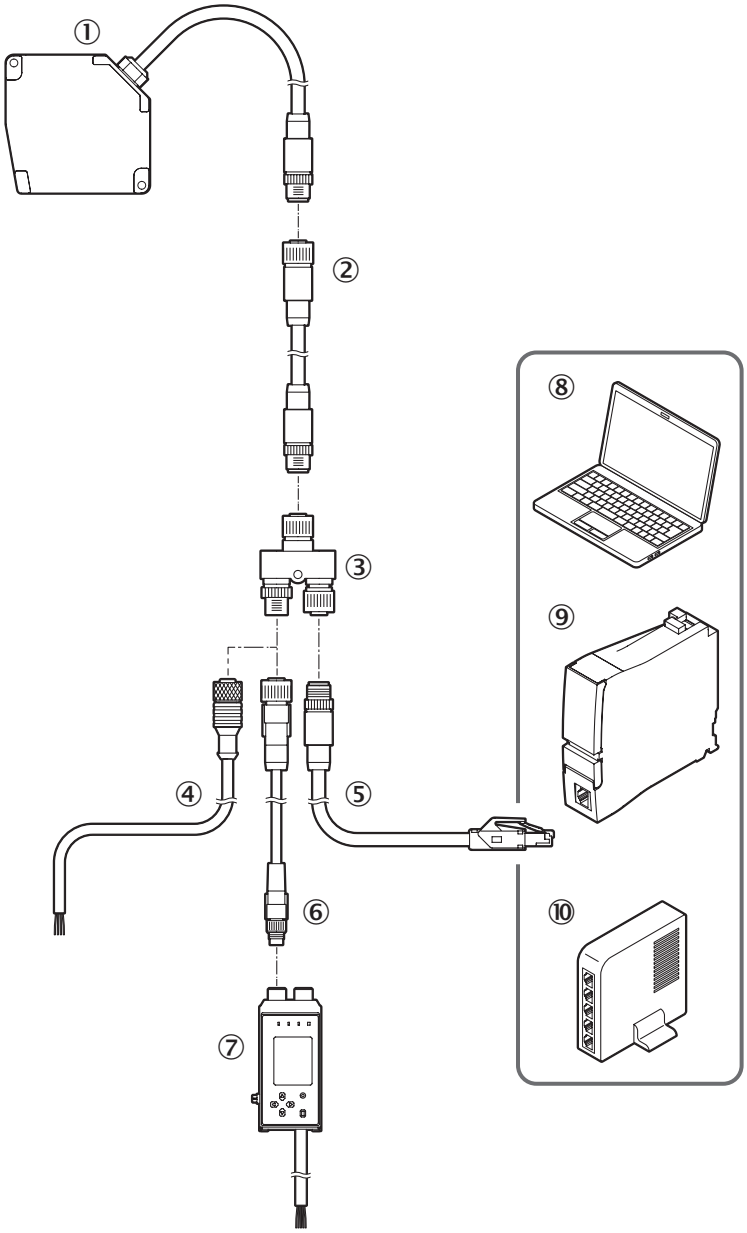
China Compulsory Product Certification (CCC) exempt	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

DIMENSIONAL DRAWING OD5000-C150X40



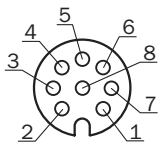
Dimensions in mm (inch)
① reference edge
② optical axis, receiver
③ optical axis, sender
④ measuring range
⑤ Link LED
⑥ status LED
⑦ male connector M12, 8-pin

CONNECTION DIAGRAM



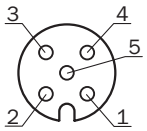
① OD5000
② Sensor head extension cable
③ Y-distribution (included with delivery)
④ Cable with open ends
⑤ Ethernet Connection cable
⑥ AOD1 connection cable, M12, 4-pin to M8, 4-pin
⑦ AOD1
⑧ PC
⑨ PLC
⑩ switch

PIN ASSIGNMENT



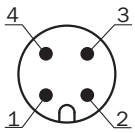
female connector M12, 8-pin, A-coded
① Input (MF) / RS485+
② 0 V
③ 24 V
④ TxD-
⑤ RxD+
⑥ TxD+
⑦ Input (MF) / RS485-
⑧ RxD-

PIN ASSIGNMENT



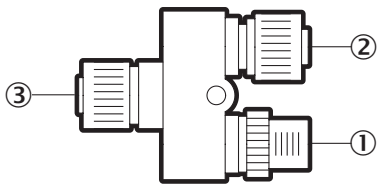
female connector M12, 5-pin, D-coded
① TxD+
② RxD+
③ TxD-
④ RxD-
⑤ nc

PIN ASSIGNMENT



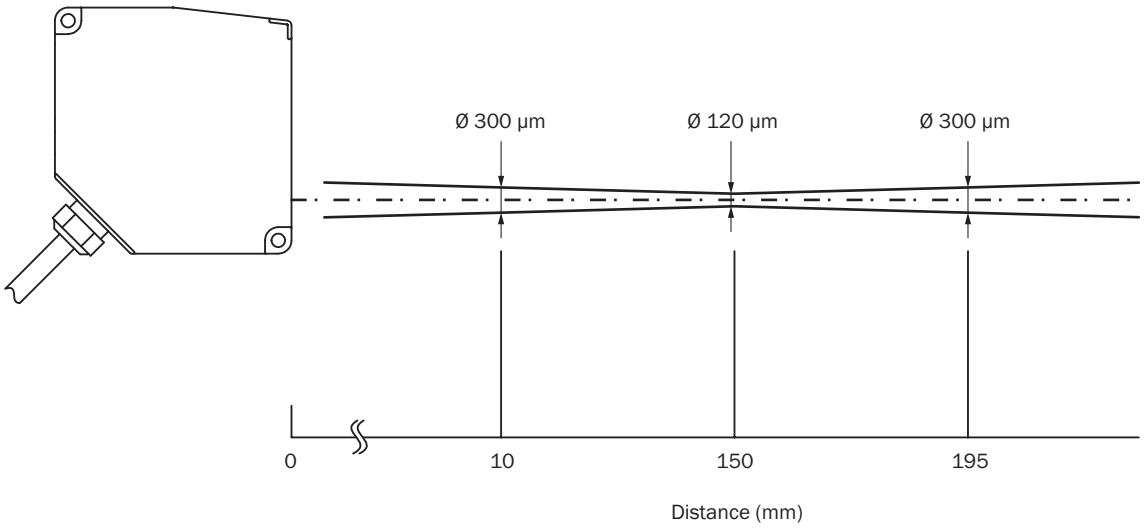
Connector M12, 4-pin, A-coded
① 24 V
② Input (MF) / RS485+
③ 0 V
④ Input (MF) / RS485-

PIN ASSIGNMENT Y-JUNCTIONS

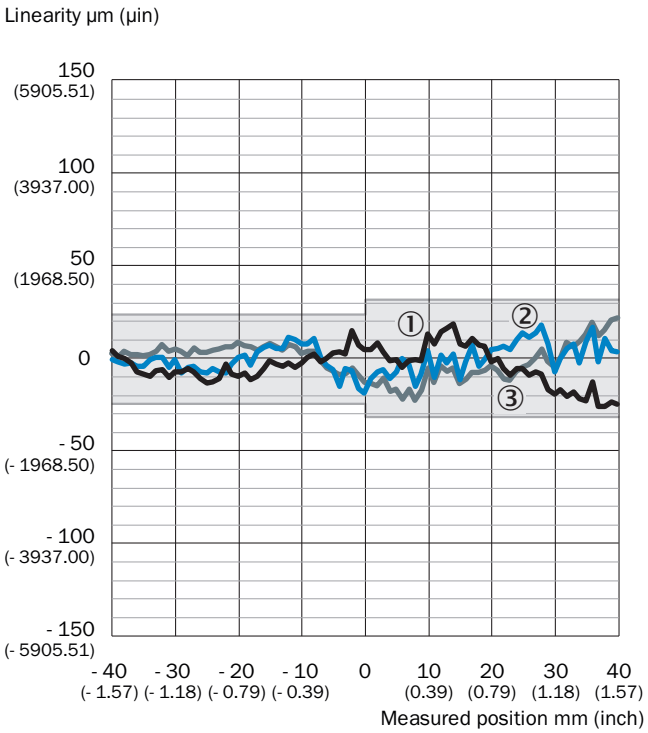


Y-distribution connections
① M12, 4-pin, A-coded
② M12, 5-pin, D-coded
③ M12, 8-pin, A-coded

LIGHT SPOT SIZE



LINEARITY OD5000-C150T40 (DIFFUSE)



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/6063625

SICK AG
WALDKIRCH
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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

SICK

Sensor Intelligence