

OD5000-C150T40

OD5000

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
OD5000-C150T40	6063625

Other models and accessories → www.sick.com/OD5000



Detailed technical data

Features

Measuring range	110 mm ... 190 mm
Target	Natural objects
Repeatability	0.2 μm ^{1) 2)}
Linearity	Diffuse ± 24 μm, Near side ¹⁾ Diffuse ± 32 μm, Far side ¹⁾ Specular not supported
Response time	≥ 12.5 μs ^{3) 4)}
Output time	≥ 0.0125 ms
Light source	Laser, red visible red light
Type of light	Visible red light
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014) ⁵⁾
Typ. light spot size (distance)	Ø 120 μm
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⁾ Visible, wavelength: 655 nm, max. power: 0.39 mW.

Interfaces

Ethernet	✓, TCP/IP, UDP
-----------------	----------------

¹⁾ Optional over evaluation unit AOD1.

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
Indication	Status LEDs
Enclosure rating	IP67
Protection class	III (EN 50178)

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
Connection type	Cable with male connector, M12, 8-pin, A-coded, 50 cm

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.

Classifications

ECLASS 5.0	27270801
ECLASS 5.1.4	27270801
ECLASS 6.0	27270801
ECLASS 6.2	27270801
ECLASS 7.0	27270801

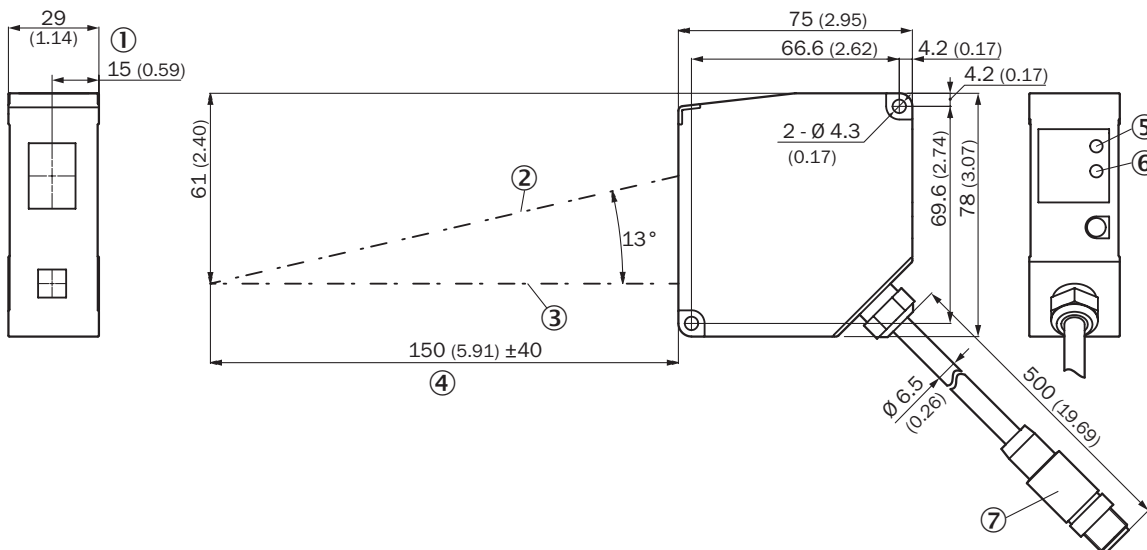
OD5000-C150T40 | OD5000

DISPLACEMENT MEASUREMENT SENSORS

ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

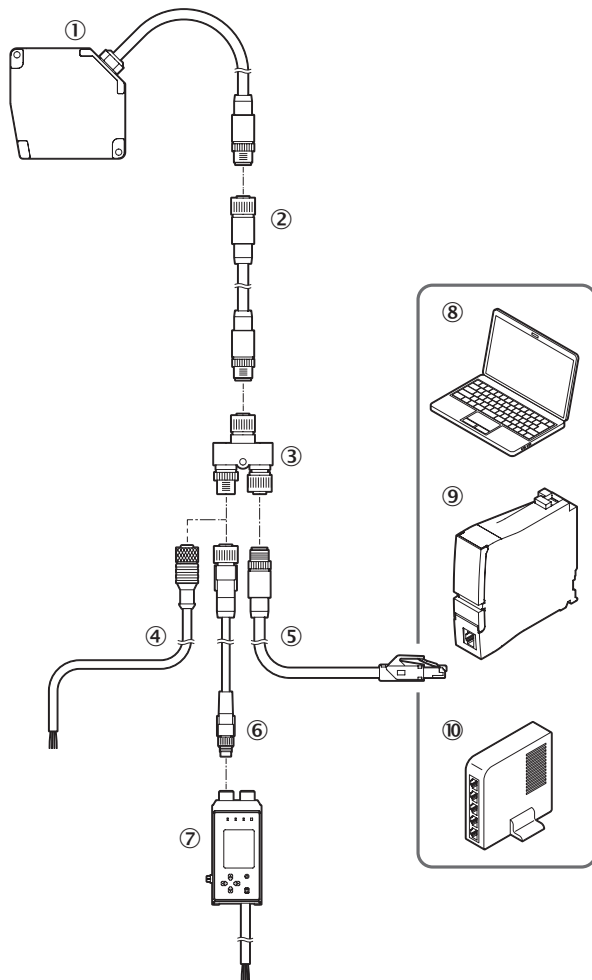
Dimensional drawing (Dimensions in mm (inch))

OD5000-C150x40



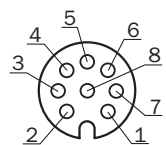
- ① Reference edge
- ② Optical axis, receiver
- ③ Optical axis, sender
- ④ Measuring range
- ⑤ Link LED
- ⑥ Status LED
- ⑦ Male connector M12, 8-pin

Connection diagram



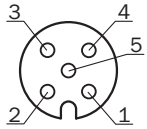
- ① OD5000
- ② Sensor head extension cable
- ③ Y-distribution (included with delivery)
- ④ Cable with open ends
- ⑤ Ethernet Connection cable
- ⑥ AOD1 connection cable, M12, 4-pin to M8, 4-pin
- ⑦ AOD1
- ⑧ PC
- ⑨ PLC
- ⑩ switch

PIN assignment



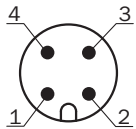
Female connector M12, 8-pin, A-coded

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



Female connector M12, 5-pin, D-coded

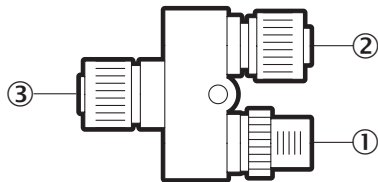
- ① TxD+
- ② RxD+
- ③ TxD-
- ④ RxD-
- ⑤ nc



Connector M12, 4-pin, A-coded

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

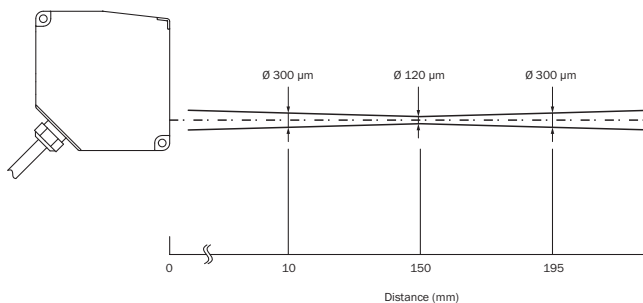
Y-junctions



Y-distribution connections

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

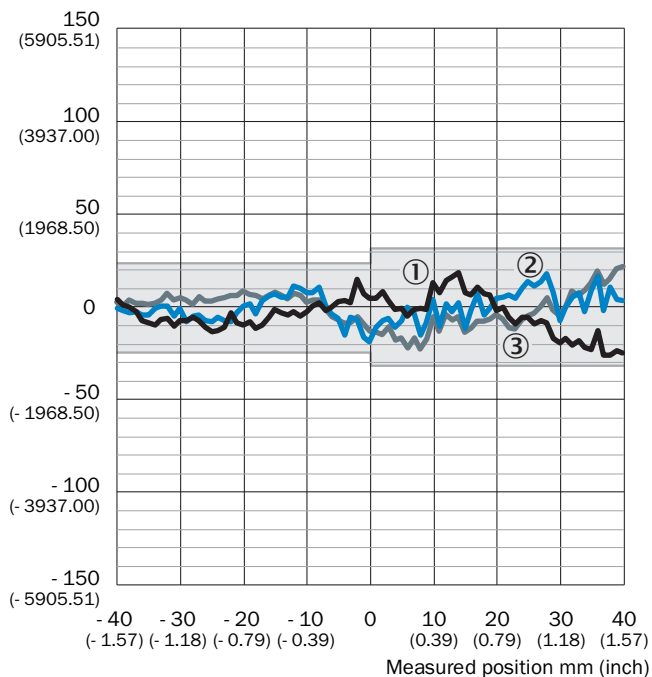
Light spot size



Linearity

OD5000-C150T40 (diffuse)

Linearity μm (μin)





- ① White, 60% remission
- ② Black, 9.5% remission
- ③ Stainless steel

Recommended accessories

Other models and accessories → www.sick.com/OD5000

	Brief description	Type	Part no.
Evaluation units			
	OD Mini evaluation unit, master, 1 x Q, M8 male connector, 4-pin	AOD1-MR24Q1	6054270
	OD Mini evaluation unit, master, 2 x Q, M12 male connector, 5-pin	AOD1-MR25Q2	6054272
	OD Mini evaluation unit, OD5000 and OL1, master, 3 x Q, 1 x analog, open end cable, 2 m	AOD1-MR27C4	6058195
	OD Mini evaluation unit, slave, 1 x Q, M8 male connector, 4-pin	AOD1-SR24Q1	6054271
	OD Mini evaluation unit, slave, 2 x Q, M12 male connector, 5-pin	AOD1-SR25Q2	6054273
	OD Mini evaluation unit, OD5000 and OL1, slave, 3 x Q, 1 x analog, open end cable, 2 m	AOD1-SR27C4	6058196
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight • Connection type head B: Male connector, M12, 8-pin, straight • Cable: 2 m, PUR 	DSC-1208-G02MA	6064004

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation, Robot 	YF2A14-020UB3XLEAX	2095607
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight, D-coded • Connection type head B: Male connector, RJ45, 4-pin, straight • Signal type: Ethernet, PROFINET • Cable: 2 m, 4-wire, PUR, halogen-free • Description: Ethernet, PROFINET, shielded • Application: Drag chain operation, Zones with oils and lubricants 	YM2D24-020PN1MRJA4	2106182

Recommended services

Additional services → www.sick.com/OD5000

	Type	Part no.
Commissioning		
<ul style="list-style-type: none"> • Product area: Displacement measurement sensors • Range of services: Inspection of connection and mounting, optimization of parameters of SICK product as well as tests, set-up of previously defined functions of the scaling of the analog measuring range, switching point position, hysteresis, measuring frequency, measured value filter, signal quality, evaluation function, or communication interface • Travel expenses: The prices do not include travel costs such as hotel, flight, travel time and expenses. • Duration: Additional work will be invoiced separately 	DT20 Hi/OD/OL commissioning	1612241

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