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Product data sheet



OD2000-3502T15

OD2000

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.

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OD2000-3502T15 | OD2000

DISPLACEMENT MEASUREMENT SENSORS



Ordering information

Type	Part no.
OD2000-3502T15	6074384

Other models and accessories → www.sick.com/OD2000

Detailed technical data

Mechanics/electronics

Supply voltage V_s	DC 18 V ... 24 V, ± 10%, including residual ripple [1]
Power consumption	1.5 W, At 24 V DC [2]
Warm-up time	< 30 min
Housing material	Plastic (PBT)
Window material	Plastic (PMMA)
Connection type	Cable with male connector, M12, 5-pin, A-coded, 30 cm
Indication	OLED display, status LEDs
Control elements	4 buttons
Weight	90 g
Dimensions (W x H x D)	27 mm x 60 mm x 50 mm
Enclosure rating	IP67
Protection class	III (EN 50178)
Electrical safety	IEC 61010-1 AMD 1:2016-12

[1] Limit values, reverse-polarity protected.
[2] Without load, at +20 °C.

Safety-related parameters

$MTTF_D$	107 years
DC_{avg}	0%

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Performance

Measurement range min ... max:	100 mm ... 600 mm [1]
Target	Natural objects
Repeatability	20 µm [2] [3] [4]
Linearity	± 500 µm [2] [4] [5]
Response time	≥ 0.533 ms [6]
Measuring frequency	≤ 7.5 kHz
Output time	≥ 0.1333 ms
Light source	Laser, red visible red light
Laser class	2 (IEC 60825-1:2014, EN 60825-1:2014) [7]
Typ. light spot size (distance)	Ø 600 µm (350 mm)
Additional function	Adjustable average value or media filter, Switching mode: Distance to Object (DtO) / switching window / object between sensor and background (ObSB), teach-in of digital output, invertable digital output, teach-in of analog output, Invertable analog output, Switchable analog output (mA / V), Multifunctional input: sender off/hold functions/deactivated, switch-off display, lock user interface, Display can be rotated by 180°, Alarm function, Edge height jump, Time functions (ON/OFF delay, 1 shot), region of interest

[1] 6 % ... 90 % remission; at default settings.
[2] Measurement on 60 % remission (ceramic, white).
[3] Average value setting: 512, median: 31, measuring frequency: 5 kHz, in the middle of the measuring range, for static measurement.
[4] At T = +25 °C, under constant general conditions.
[5] Observe min. warm-up time of 30 minutes.
[6] Dependent on the set average or sensitivity.
[7] Visible, wavelength: 655 nm, max. average power: 1 mW, max. pulse power: 1 mW, max. pulse duration: 5 ms.

Interfaces

IO-Link	✓, IO-Link V1.1
Function	Process data, parameterization, diagnosis, data storage
Data transmission rate	230,4 kbit/s (COM3), Process data length 6 bytes, min. cycle time 0.7 ms
Digital input	In_1 Can be used as sender off, trigger for hold functions, or deactivated
Digital output	
Number	2 [1]
Type	PNP/NPN, selectable
Analog output	
Number	1
Type	Current output / voltage output
Function	Selectable
Current	4 mA ... 20 mA, ≤ 300 Ω
Voltage	0 V ... 10 V, > 10,000 Ω
Resolution	16 bit

[1] PNP/PP: HIGH = UV > 13.5 V/LOW = UV < 8 V; NPN: HIGH = UV < 8 V/LOW = UV > 13.5 V.

Ambient data

Ambient temperature, operation	–10 °C ... +50 °C, Operating temperature at V_S = 24 V

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

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Ambient temperature, storage	–20 °C ... +60 °C
Relative air humidity (non-condensing)	35 % ... 85 %
Temperature drift	300 µm/K
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

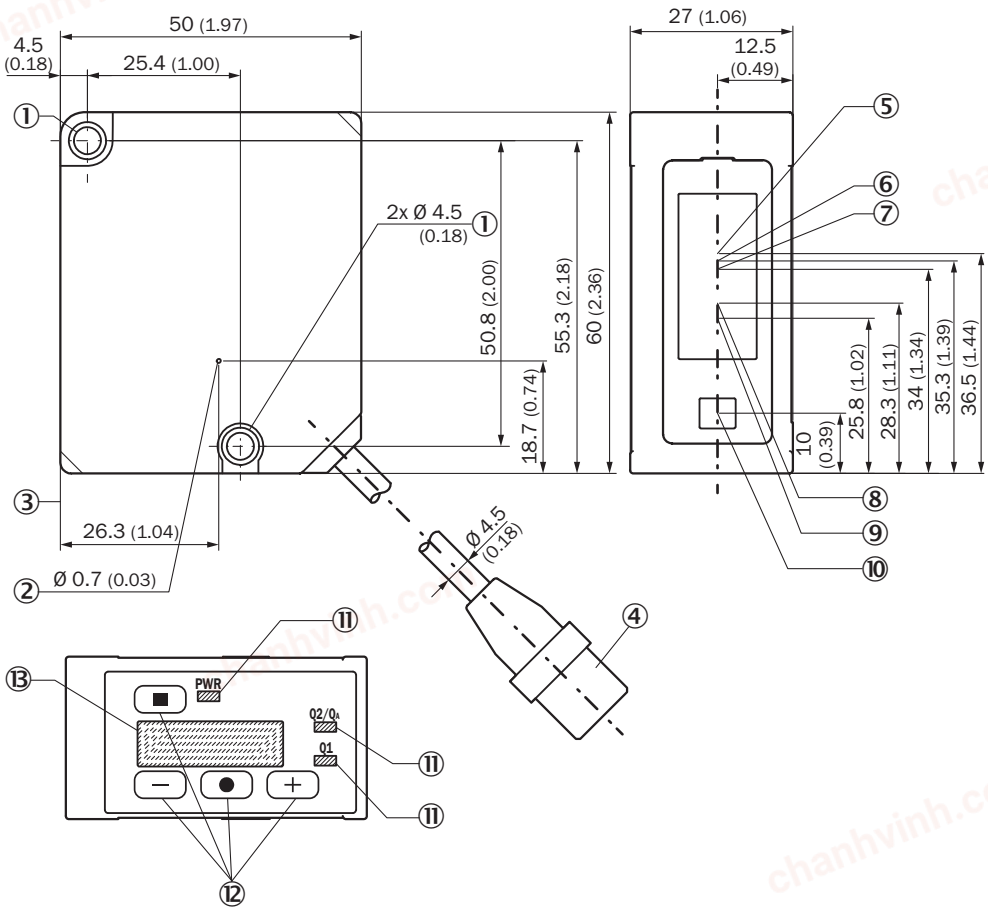
[1)] With constant object movement in the measuring range.

Classifications

eCl@ss 5.0	27270801
eCl@ss 5.1.4	27270801
eCl@ss 6.0	27270801
eCl@ss 6.2	27270801
eCl@ss 7.0	27270801
eCl@ss 8.0	27270801
eCl@ss 8.1	27270801
eCl@ss 9.0	27270801
eCl@ss 10.0	27270801
eCl@ss 11.0	27270801
eCl@ss 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

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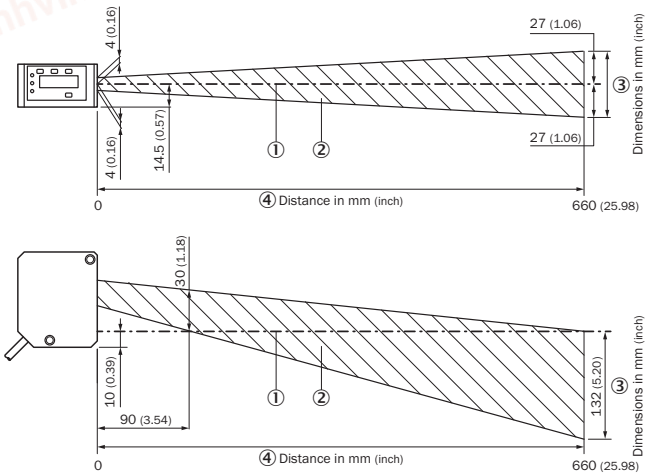
Dimensional drawing (Dimensions in mm (inch))



Structure and device dimensions, unit: mm (inch), decimal separator: period

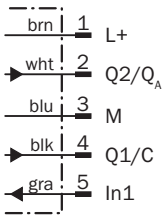
① M4 fixing holes
② Ventilation opening (do not cover)
③ Device zero point (distance = 0 mm)
④ Device cable (length: 300 mm) with male connector, M12, 5-pin, A-coded
⑤ Center of optical axis, receiver (device type OD2000-350, OD2000-700)
⑥ Center of optical axis, receiver (device type OD2000-245)
⑦ Center of optical axis, receiver (device type OD2000-130)
⑧ Center of optical axis, receiver (device type OD2000-050)
⑨ Center of optical axis, receiver (device type OD2000-030)
⑩ Center of optical axis, sender
⑪ Status LEDs
⑫ Control elements
⑬ Display

Interference diagram



① Optical axis sender and receiver
② Interference range
③ Dimensions in mm (inch)
④ Distance in mm

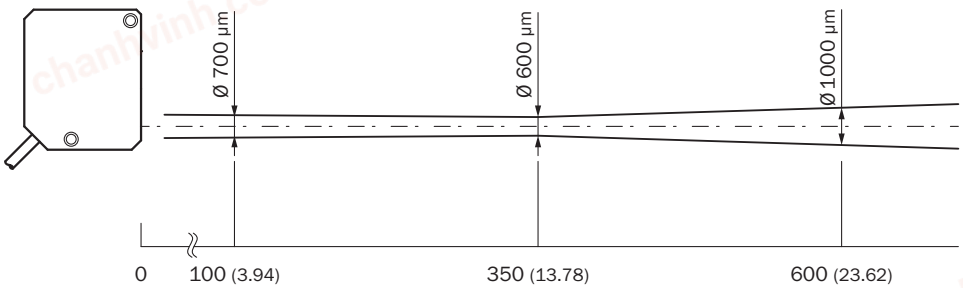
Connection diagram



① Brown
② White
③ Blue
④ Black
⑤ Gray

Light spot size

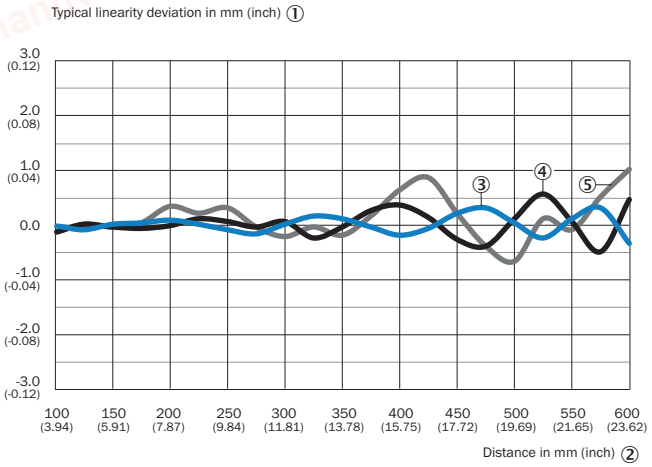
Typical light spot size OD2000-350xxxx



Unit: mm (inch), decimal separator: period

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Linearity



① Typical linearity deviation in mm (inch)
② Distance in mm (inch)
③ White 60% remission factor
④ Black 9.5% remission factor
⑤ Stainless steel

Recommended accessories

Other models and accessories ➜ www.sick.com/OD2000

	Brief description	Type	Part no.
Connection modules			
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790
Mounting brackets and plates			
	Stainless-steel mounting bracket, stainless steel	BEF-WN-OD2000	4112929
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A15-020VB5XLEAX	2096239

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Recommended services

Additional services ➜ www.sick.com/OD2000

	Type	Part no.
Extended warranty		
• **Product area:** Identification solutions, machine vision, Distance sensors, Detection and ranging solutions • **Range of services:** The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery). • **Duration:** Five-year warranty from delivery date.	Extended warranty for a total of five years from delivery date	1680671

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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