Data sheet

OD2000-1301T15

OD2000

DISPLACEMENT SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
OD2000-1301T15	6074382

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

Detailed technical data

Features

Measuring range	60 mm ... 200 mm [1]
Repeatability	4 µm [2] [3] [4]
Linearity	± 140 µm [2] [4] [5]
Response time	≥ 0.533 ms [6]
Measuring frequency	≤ 7.5 kHz
Output time	≥ 0.1333 ms
Emitted beam	
Light source	Laser, red
Typ. light spot size (distance)	Ø 300 µm (130 mm)
Key laser figures	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	1 [7]
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

[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] Observe min. warm-up time of 30 minutes.
[5] At T = +25 °C, under constant general conditions.
[6] Dependent on the set average or sensitivity.
[7] Visible, wavelength: 655 nm, max. average power: 0.39 mW, max. pulse power: 0.39 mW, max. pulse duration: 5 ms.

	Lock user interface Display can be rotated by 180° Alarm function Edge height jump Time functions (ON/OFF delay, 1 shot) region of interest
Safety-related parameters	
$MTTF_D$	107 years
DC_{avg}	0%

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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
Maximum output current I_A	≤ 100 mA
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.

Electronics

Supply voltage U_B	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
Display	OLED display, status LEDs
Enclosure rating	IP67
Protection class	III (EN 50178)
Electrical safety	IEC 61010-1 AMD 1:2016-12
Connection type	

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

	Cable with male connector, 30 cm

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

Mechanics

Dimensions (W x H x D)	27 mm x 60 mm x 50 mm
Control elements	4 buttons
Housing material	Plastic (PBT)
Window material	Plastic (PMMA)
Weight	90 g

Ambient data

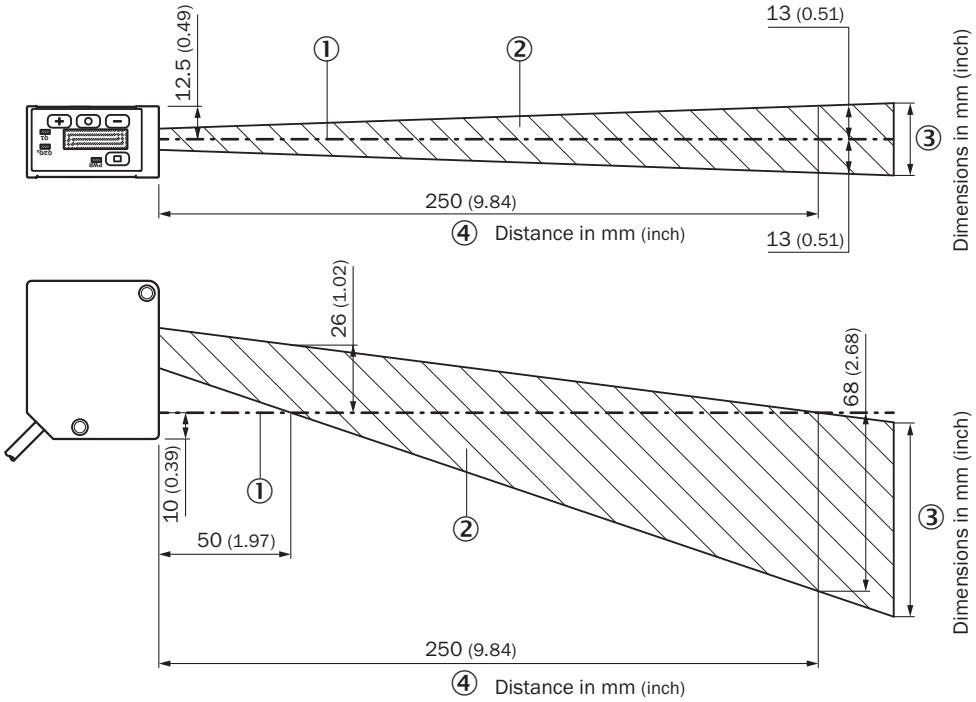
Ambient temperature, operation	–10 °C ... +50 °C, Operating temperature at V_S = 24 V
Ambient temperature, storage	–20 °C ... +60 °C
Relative air humidity (non-condensing)	35 % ... 85 %
Temperature drift	84 µm/K
Typ. Ambient light immunity	Artificial light: ≤ 3,000 lx [1] Sunlight: ≤ 10,000 lx
Vibration 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

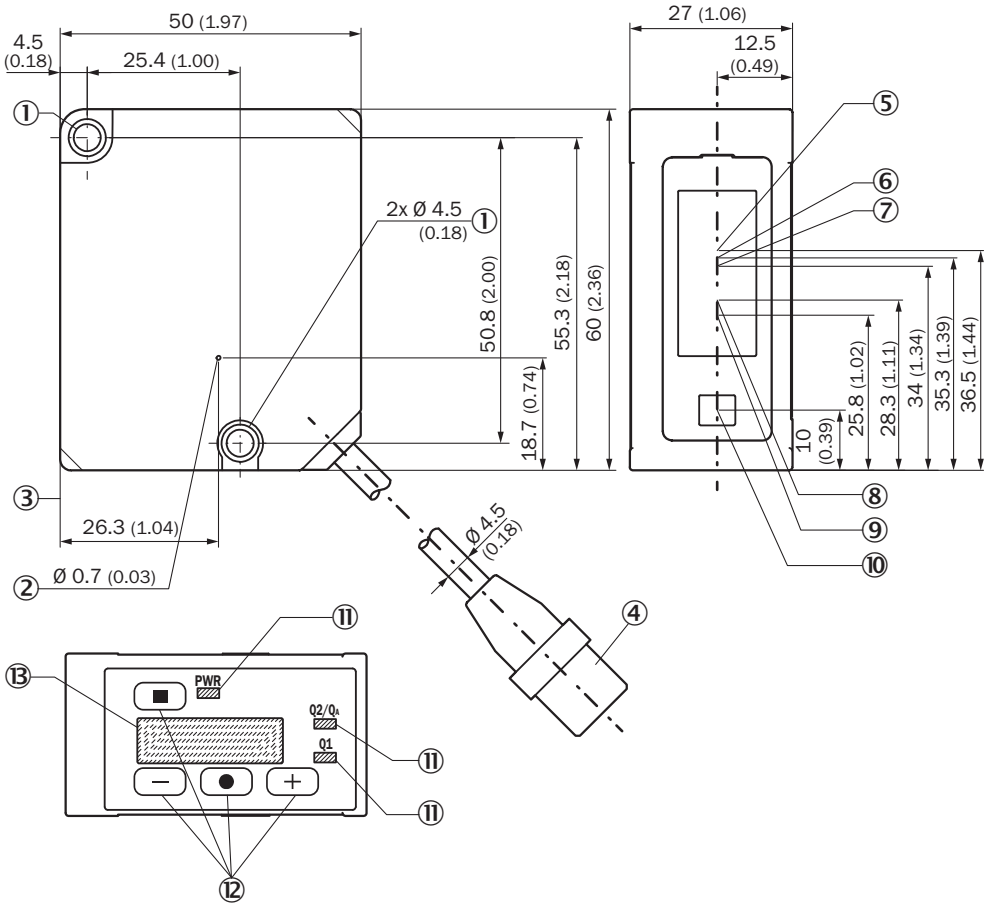
ECLASS 5.0	27270801
ECLASS 5.1.4	27270801
ECLASS 6.0	27270801
ECLASS 6.2	27270801
ECLASS 7.0	27270801
ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC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

Interference diagram



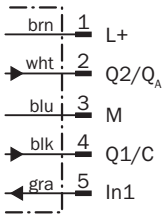
Dimensions in mm (inch)
① Optical axis sender and receiver
② Interference range
③ dimensions in mm (inch)
④ Distance in mm

Dimensional drawing



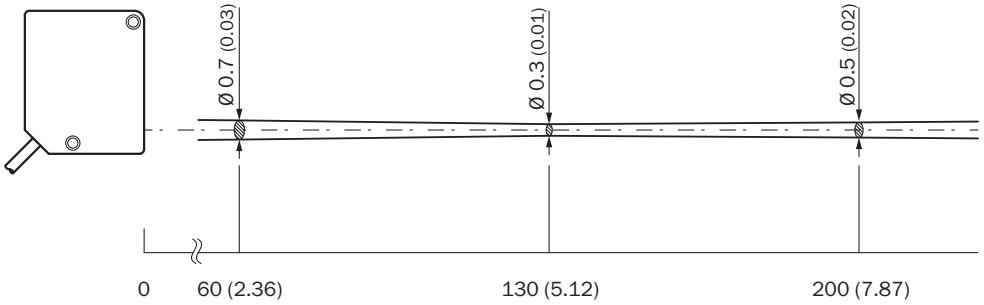
Dimensions in mm (inch)
structure and device dimensions, unit: mm (inch), decimal separator: period
① M4 fixing holes
② Ventilation opening (do not cover)
③ Device zero point (distance = 0 mm)
④ Device cable (length: 300 mm) with male connector, M12, 5-pin, A-coded
⑤ Center of optical axis, receiver (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

Connection diagram



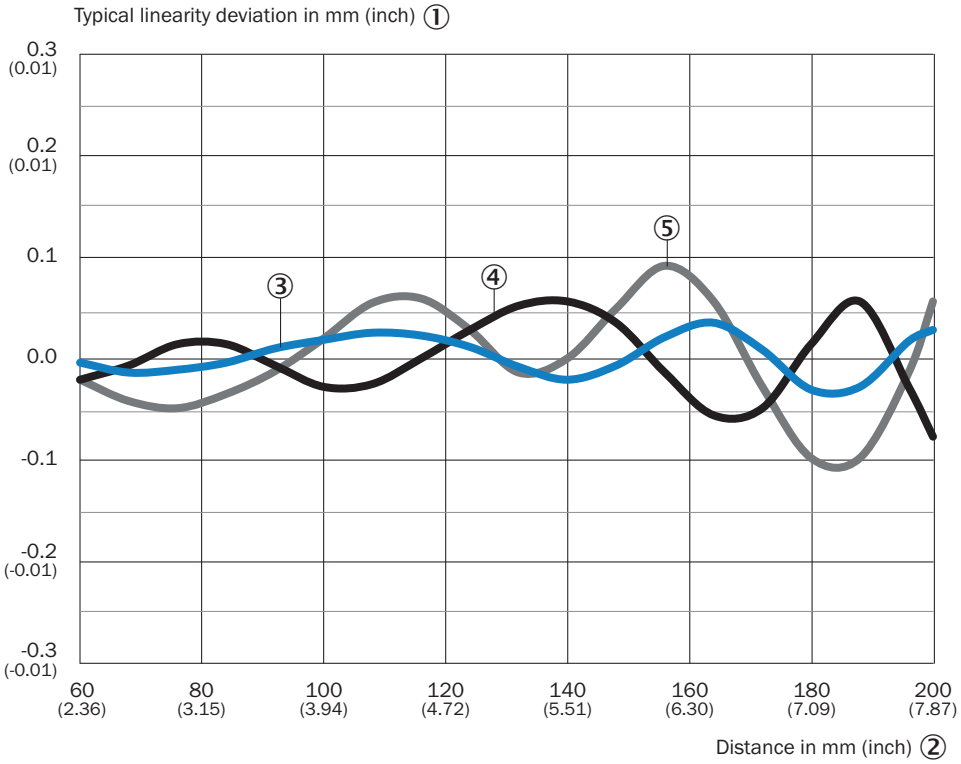
① Brown
② White
③ blue
④ Black
⑤ Gray

Light spot size Typical light spot size OD2000-1301T15



Unit: mm (inch), decimal separator: period

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.
network devices			
	Strich		On request

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-020VB5XLEAX	2096239
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-C60VB5XLEAX	2145570
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-030VB5XLEAX	2145572
Mounting systems			
	• **Description:** Stainless-steel mounting bracket • **Material:** Stainless steel • **Details:** Stainless steel	BEF-WN-OD2000	4112929

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.”

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