



# OD2000-2452T15

## OD2000

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
OD2000-2452T15	6074383

Other models and accessories → [www.sick.com/OD2000](http://www.sick.com/OD2000)

### Detailed technical data

#### Features

<b>Measuring range</b>	70 mm ... 420 mm <sup>1)</sup>
<b>Repeatability</b>	10 μm <sup>2) 3) 4)</sup>
<b>Linearity</b>	± 350 μm <sup>2) 4) 5)</sup>
<b>Response time</b>	≥ 0.533 ms <sup>6)</sup>
<b>Measuring frequency</b>	≤ 7.5 kHz
<b>Output time</b>	≥ 0.1333 ms
<b>Emitted beam</b>	
Light source	Laser, red
Typ. light spot size (distance)	Ø 500 μm (245 mm)
<b>Key laser figures</b>	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	2 <sup>7)</sup>
	8)
<b>Additional function</b>	Adjustable average value or median 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°

<sup>1)</sup> 6 % ... 90 % remission; at default settings.

<sup>2)</sup> Measurement on 60 % remission (ceramic, white).

<sup>3)</sup> Average value setting: 512, median: 31, measuring frequency: 5 kHz, in the middle of the measuring range, for static measurement.

<sup>4)</sup> At T = +25 °C, under constant general conditions.

<sup>5)</sup> Observe min. warm-up time of 30 minutes.

<sup>6)</sup> Dependent on the set average or sensitivity.

<sup>7)</sup> Visible, wavelength: 655 nm, max. average power: 1 mW, max. pulse power: 1 mW, max. pulse duration: 5 ms.

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

	Alarm function Edge height jump Time functions (ON/OFF delay, 1 shot) region of interest
<b>Safety-related parameters</b>	
MTTF <sub>D</sub>	107 years
DC <sub>avg</sub>	0%

- 1) 6 % ... 90 % remission; at default settings.
- 2) Measurement on 60 % remission (ceramic, white).
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- 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.
- 8) Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

## Interfaces

<b>IO-Link</b>	✓ , 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
<b>Digital input</b>	In <sub>1</sub> Can be used as sender off, trigger for hold functions, or deactivated
<b>Digital output</b>	
Number	2 <sup>1)</sup>
Type	PNP/NPN, selectable
<b>Analog output</b>	
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

- <sup>1)</sup> PNP/PP: HIGH = UV > 13.5 V/LOW = UV < 8 V; NPN: HIGH = UV < 8 V/LOW = UV > 13.5 V.

## Electronics

<b>Supply voltage U<sub>B</sub></b>	DC 18 V ... 24 V, ± 10%, including residual ripple <sup>1)</sup>
<b>Power consumption</b>	1.5 W, At 24 V DC <sup>2)</sup>
<b>Warm-up time</b>	< 30 min
<b>Display</b>	OLED display, status LEDs
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	III (EN 50178)
<b>Electrical safety</b>	IEC 61010-1 AMD 1:2016-12
<b>Connection type</b>	Cable with male connector, M12, 5-pin, A-coded, 30 cm

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

## Mechanics

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

## Ambient data

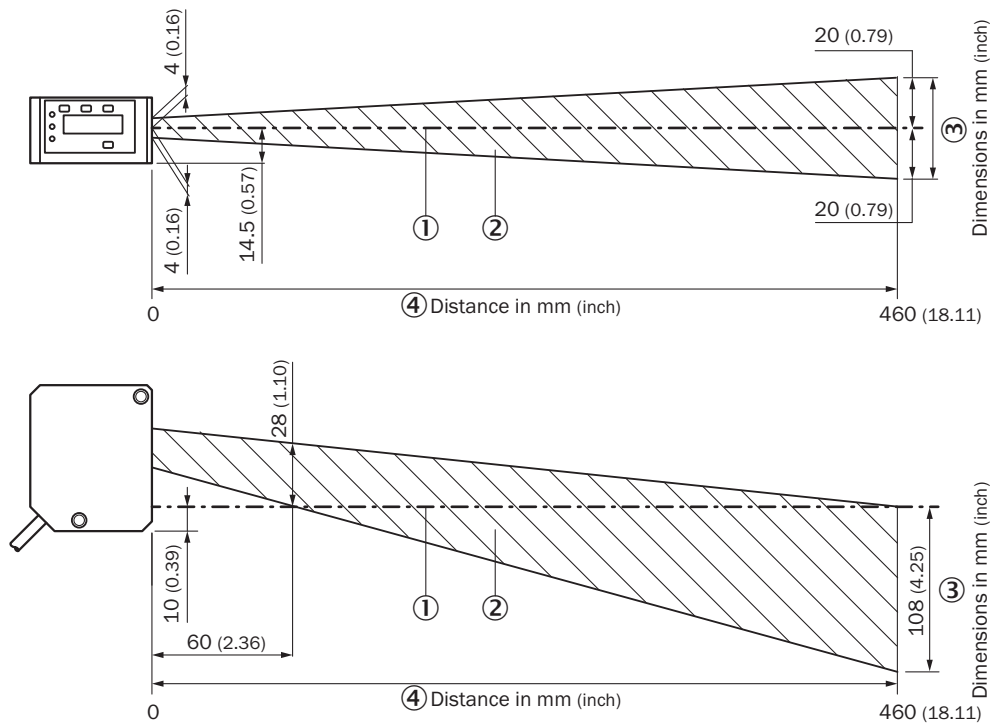
<b>Ambient temperature, operation</b>	-10 °C ... +50 °C, Operating temperature at V <sub>S</sub> = 24 V
<b>Ambient temperature, storage</b>	-20 °C ... +60 °C
<b>Relative air humidity (non-condensing)</b>	35 % ... 85 %
<b>Temperature drift</b>	210 µm/K
<b>Typ. Ambient light immunity</b>	Artificial light: ≤ 3,000 lx <sup>1)</sup> Sunlight: ≤ 10,000 lx
<b>Vibration resistance</b>	EN 60068-2-6, EN 60068-2-64
<b>Shock resistance</b>	EN 60068-2-27

<sup>1)</sup> With constant object movement in the measuring range.

## Classifications

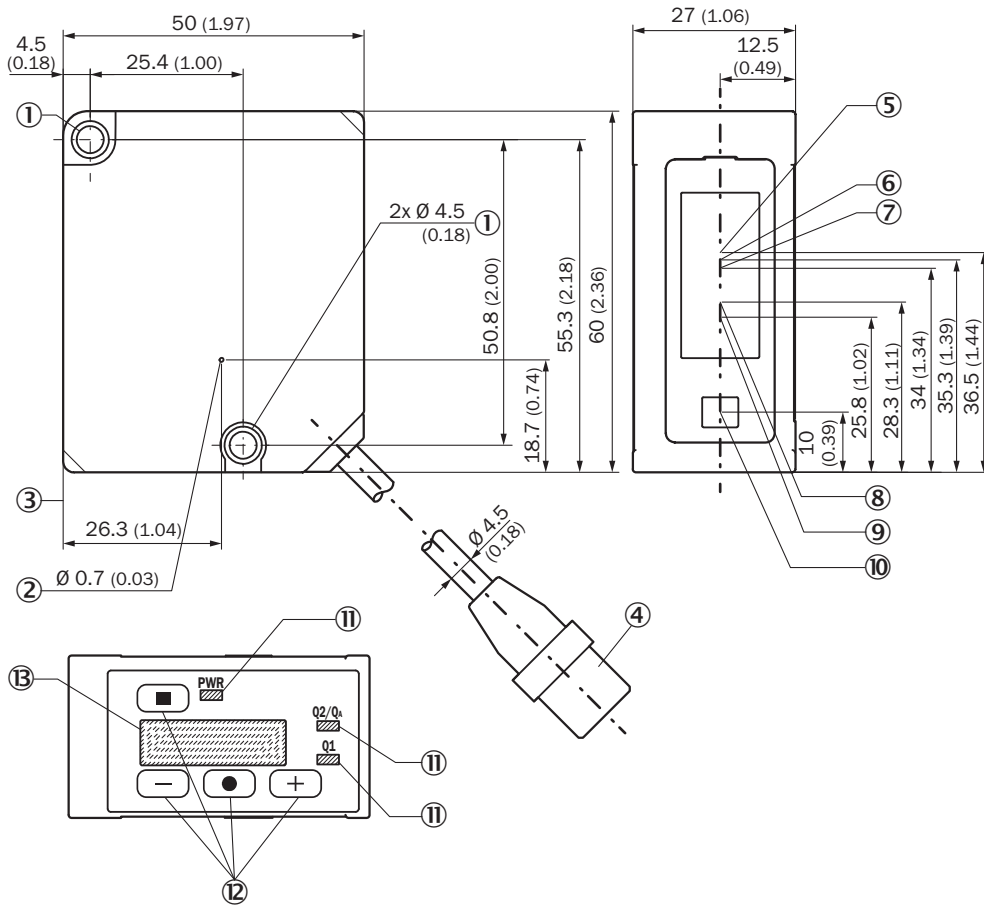
<b>ECLASS 5.0</b>	27270801
<b>ECLASS 5.1.4</b>	27270801
<b>ECLASS 6.0</b>	27270801
<b>ECLASS 6.2</b>	27270801
<b>ECLASS 7.0</b>	27270801
<b>ECLASS 8.0</b>	27270801
<b>ECLASS 8.1</b>	27270801
<b>ECLASS 9.0</b>	27270801
<b>ECLASS 10.0</b>	27270801
<b>ECLASS 11.0</b>	27270801
<b>ECLASS 12.0</b>	27270916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

Interference diagram



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

Dimensional drawing

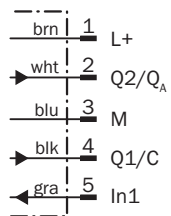


Dimensions in mm (inch)

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

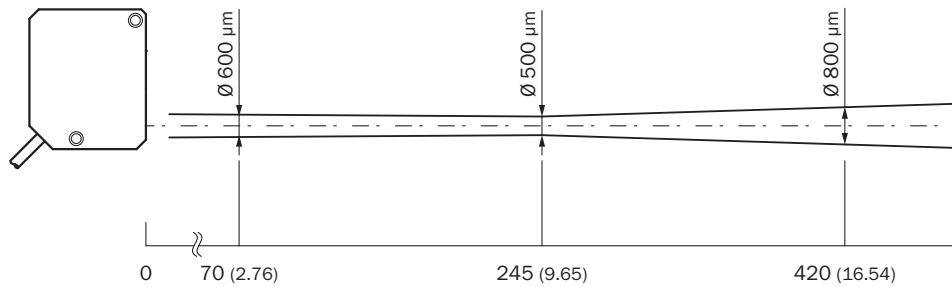
- ① M4 fixing holes
- ② Ventilation opening (do not cover)
- ③ Device zero point (distance = 0 mm)
- ④ Device cable (length: 300 mm) with male connector, M12, 5-pin, A-coded
- ⑤ Center of optical axis, receiver (device type OD2000-350, OD2000-700)
- ⑥ Center of optical axis, receiver (device type OD2000-245)
- 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



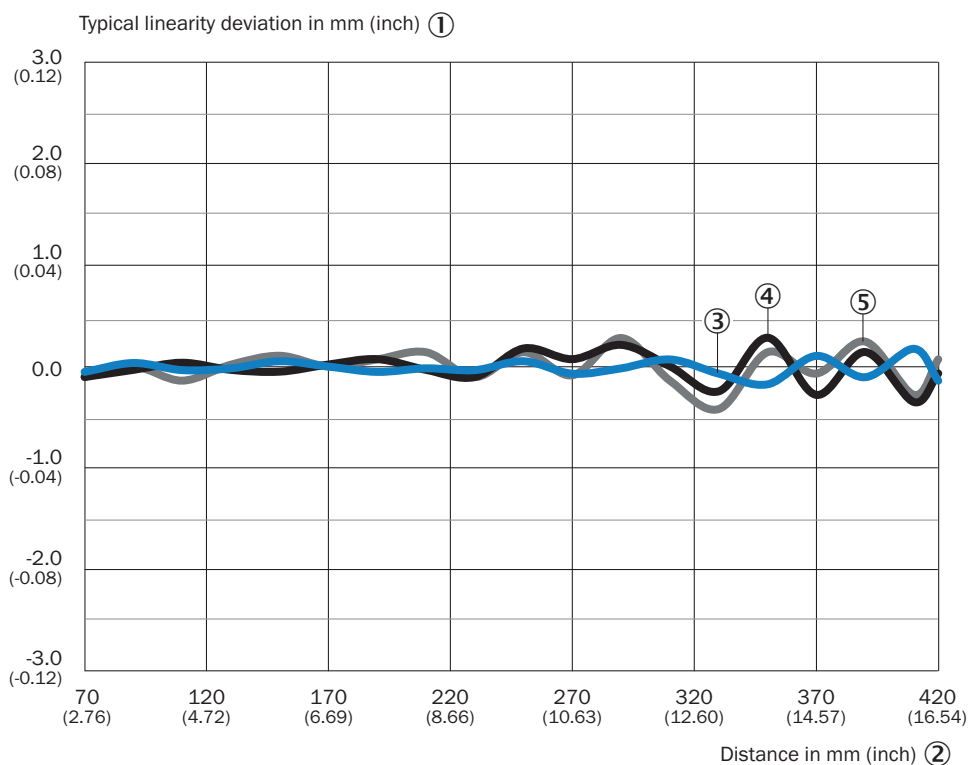
- ① Brown
- ② White
- ③ blue
- ④ Black
- ⑤ Gray

### Light spot size Typical light spot size OD2000-245xxxx



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](http://www.sick.com/OD2000)

	Brief description	Type	part no.
integration modules and adapters			
		IOLA2US-01101 (SiLink2 Master)	1061790

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 5-wire, PVC</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>	YF2A15-020VB5XLEAX	2096239
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 0.6 m, 5-wire, PVC</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>	YF2A15-C60VB5XLEAX	2145570
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 3 m, 5-wire, PVC</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>	YF2A15-030VB5XLEAX	2145572
Mounting systems			
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Stainless-steel mounting bracket</li> <li>• <b>Material:</b> Stainless steel</li> <li>• <b>Details:</b> Stainless steel</li> </ul>	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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)