

# OD5-150W40

OD Precision

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
OD5-150W40	6049580

Other models and accessories → [www.sick.com/OD\\_Precision](http://www.sick.com/OD_Precision)



## Detailed technical data

### Features

<b>System part</b>	Sensor head
<b>Measuring range</b>	110 mm ... 190 mm <sup>1)</sup>
<b>Repeatability</b>	2 μm <sup>2)</sup>
<b>Linearity</b>	± 40 μm <sup>2)</sup>
<b>Response time</b>	≥ 0.1 ms <sup>3) 4)</sup>
<b>Measuring frequency</b>	≤ 10 kHz <sup>1) 4)</sup>
<b>Output time</b>	≥ 0.1 ms
<b>Emitted beam</b>	
Light source	Laser, red
Typ. light spot size (distance)	0.33 mm x 1.6 mm (150 mm)
<b>Key laser figures</b>	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	2 <sup>5)</sup>
	6)
<b>General notes</b>	
Note on use	OD Precision sensor head can be used in combination with AOD5-P/N1 or stand-alone via RS-422, OD5-150xxx is compatible with AOD5 hardware version 1.7. and software version 4.3 (correspond with production date from Lot 1338)
<b>Safety-related parameters</b>	
MTTF <sub>D</sub>	101 years
DC <sub>avg</sub>	0%

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

<sup>2)</sup> Measurement at 90% remission (ceramic, white), or mirror for OD5-25x; averaging set to: 256 or 4096 for OD5-25x; constant ambient conditions.

<sup>3)</sup> Time needed for automatic sensitivity adjustment is calculated as: sampling period x 20. At default setting 100 μs (10kHz) this is ≤ 2ms.

<sup>4)</sup> Default setting for OD5-350x100 and OD5-500x200 = 0.8 ms, or 1.25 kHz, all others = 0.1 ms/10 kHz.

<sup>5)</sup> Wavelength: 658 nm, max. output: 1 mW.

<sup>6)</sup> Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

## Interfaces

<b>Serial</b>	✓, RS-422
Remark	RS-232 optional via external evaluation unit AOD5
<b>Digital output</b>	
Number	5 <sup>1)</sup>
Type	PNP / NPN
Maximum output current I <sub>A</sub>	≤ 100 mA
<b>Analog output</b>	
Number	3 <sup>1)</sup> 2)
Type	Current output / voltage output
Current	4 mA ... 20 mA, ≤ 300 Ω
Voltage	0 V ... 10 V <sup>3)</sup>
<b>Laser-off input</b>	1 x laser-off

<sup>1)</sup> Optional over evaluation unit AOD5.

<sup>2)</sup> A maximum of three current and three voltage outputs are possible via the AOD5 evaluation unit.

<sup>3)</sup> Output resistance 100 Ω, min. load 10 k Ω.

## Electronics

<b>Supply voltage U<sub>B</sub></b>	DC 12 V ... 24 V <sup>1)</sup>
<b>Warm-up time</b>	≤ 5 min
<b>Display</b>	LEDs, 4" color display on optional evaluation unit
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	III
<b>Connection type</b>	Cable with male connector, 0.5 m

<sup>1)</sup> DC 12 V (-5 %) ... DC 24 V (+10 %).

## Mechanics

<b>Dimensions (W x H x D)</b>	29 mm x 78 mm x 75 mm
<b>Housing material</b>	Metal (Aluminum)
<b>Window material</b>	Glass
<b>Weight</b>	250 g <sup>1)</sup>

<sup>1)</sup> Includes 0.5 m cable.

## Ambient data

<b>Ambient temperature, operation</b>	-10 °C ... +50 °C
<b>Ambient temperature, storage</b>	-20 °C ... +60 °C
<b>Relative air humidity (non-condensing)</b>	35 % ... 85 %
<b>Temperature drift</b>	± 0.01 % FS/K (FS = Full Scale = Measuring range of sensor)
<b>Typ. Ambient light immunity</b>	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 lx
<b>Vibration resistance</b>	10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each)
<b>Shock resistance</b>	50 G (x, y, z axis 3 times each)

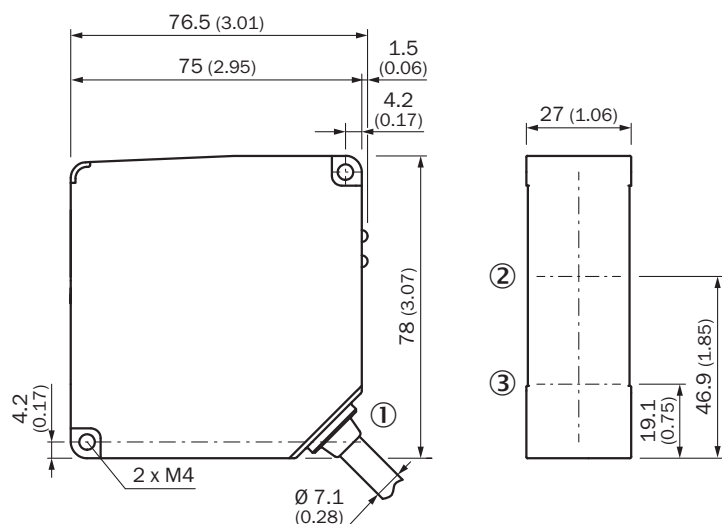
Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b>	✓

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

Dimensional drawing OD5-150xx



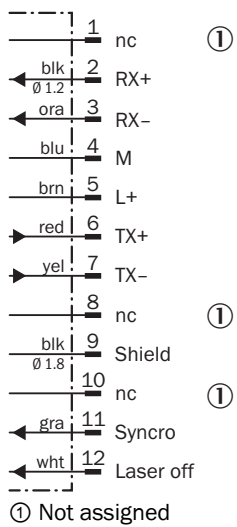
Dimensions in mm (inch)

- ① Cable Ø 7.1 mm, 0.5 m with connector, 12-pin
- ② optical axis, receiver
- ③ optical axis, sender

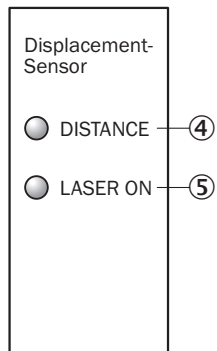
Connection type Hirose 12-pin male connector for sensor head



Connection diagram

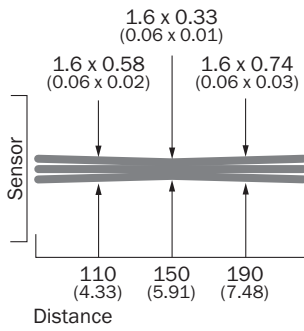


Adjustment possible



- ④ Distance indicator
- ⑤ Status indicator laser (laser on)

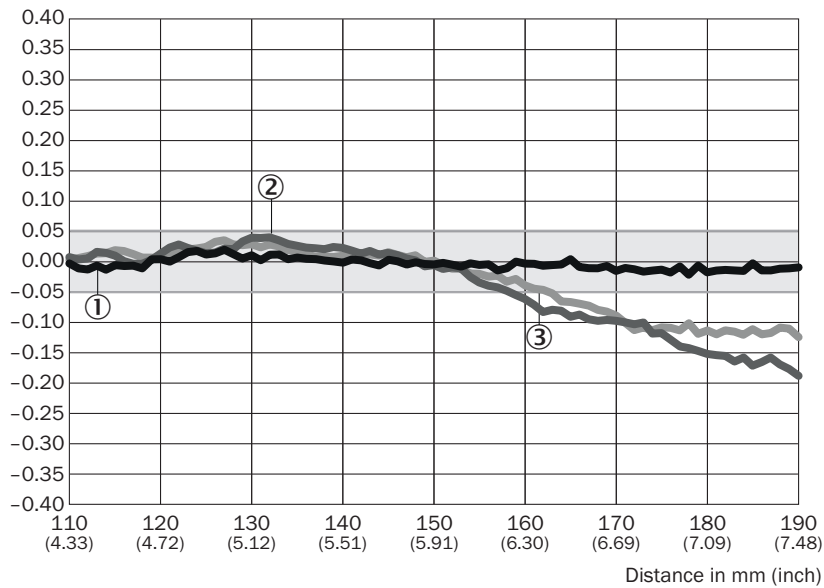
Light spot size



All dimensions in mm (inch)

Linearity OD5-150W40

Linearity [%FS]



- ① White ceramic
- ② stainless steel
- ③ black rubber

## Recommended accessories

Other models and accessories → [www.sick.com/OD\\_Precision](http://www.sick.com/OD_Precision)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Description:</b> RS-422, shielded</li> <li><b>Connection type head A:</b> Female connector, M12, 12-pin, straight</li> <li><b>Connection type head B:</b> Male connector, M12, 12-pin, straight</li> <li><b>Signal type:</b> RS-422</li> <li><b>Cable:</b> 2 m, 9-wire, twisted pair, PVC</li> <li><b>Note:</b> OD Precision specific</li> </ul>	YFHRSB-020XXXMRSE	6035986
	<ul style="list-style-type: none"> <li><b>Description:</b> Shielded</li> <li><b>Connection type head A:</b> Female connector, M12, 12-pin, straight</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Cable:</b> 5 m, 9-wire, PVC</li> <li><b>Note:</b> For stand-alone operation</li> <li><b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>	DOL-1212-G05M	6035988
	<ul style="list-style-type: none"> <li><b>Description:</b> RS-422, shielded</li> <li><b>Connection type head A:</b> Female connector, M12, 12-pin, straight</li> <li><b>Connection type head B:</b> Male connector, M12, 12-pin, straight</li> <li><b>Signal type:</b> RS-422</li> <li><b>Cable:</b> 5 m, 9-wire, twisted pair, PVC</li> <li><b>Note:</b> OD Precision specific</li> </ul>	YFHRSB-050XXXMRSE	6035987
	<ul style="list-style-type: none"> <li><b>Description:</b> Shielded</li> <li><b>Connection type head A:</b> Male connector, 50-pin, straight</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Cable:</b> 3 m, 50-wire, PVC</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Note:</b> In- and output expansion cable for AOD5-P/N1 (OD Precision)</li> </ul>	IO-EXP-AOD5	6035990
	<ul style="list-style-type: none"> <li><b>Description:</b> Unshielded</li> <li><b>Connection type head A:</b> Male connector, 12-pin</li> <li><b>Connection type head B:</b> Terminal connector, 12-pin</li> <li><b>Connection systems:</b> Spring terminal</li> <li><b>Note:</b> Terminal strip for AOD5-P/N1 (OD Precision)</li> </ul>	TERM.-AOD5	6035989
integration modules and adapters			
	<ul style="list-style-type: none"> <li><b>Description:</b> Evaluation unit: OD Precision, 5 x PNP</li> </ul>	AOD5-P1	6035985
	<ul style="list-style-type: none"> <li><b>Description:</b> Evaluation unit: OD Precision, 5 x NPN</li> </ul>	AOD5-N1	6035984

## 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)