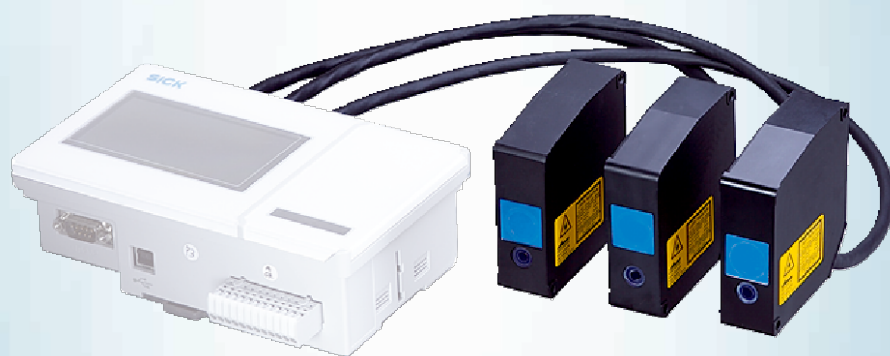




OD5-25W01

OD Precision

DISPLACEMENT SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
OD5-25W01	6035976

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



Detailed technical data

Features

System part	Sensor head
Measuring range	24 mm ... 26 mm ¹⁾
Repeatability	0.02 µm ²⁾
Linearity	± 1.6 µm ²⁾
Response time	≥ 0.1 ms ^{3) 4)}
Measuring frequency	≤ 10 kHz ^{1) 4)}
Output time	≥ 0.1 ms
Emitted beam	
Light source	Laser, red
Typ. light spot size (distance)	100 µm x 700 µm (25 mm)
Key laser figures	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	1 ⁵⁾
Special task	Thickness measurement of transparent material
Additional function	Mean-value setting 1 ... 4,096x Selectable measuring frequency (automatic / 0.1 ms ... 3.2 ms) Automatic sensitivity adjustment Manual sensitivity adjustment Mutual interference Glass thickness measurement
Thickness measurement of transparent material	0.3 mm ... 2 mm
General notes	
Note on use	OD Precision sensor head can be used in combination with AOD5-P/N1 or stand-alone via RS-422
Safety-related parameters	

¹⁾ 6 % ... 90 % remission; at default settings.

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

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

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

⁵⁾ Wavelength: 650 nm, max. output: 390 µW.

MTTF _D	101 years
DC _{avg}	0%

- 1) 6 % ... 90 % remission; at default settings.
2) Measurement at 90% remission (ceramic, white), or mirror for OD5-25x; averaging set to: 256 or 4096 for OD5-25x; constant ambient conditions.
3) Time needed for automatic sensitivity adjustment is calculated as: sampling period x 20. At default setting 100 µs (10kHz) this is <= 2ms.
4) Default setting for OD5-350x100 and OD5-500x200 = 0.8 ms, or 1.25 kHz, all others = 0.1 ms/10 kHz.
5) Wavelength: 650 nm, max. output: 390 µW.

Interfaces

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

- 1) Optional over evaluation unit AOD5.
2) A maximum of three current and three voltage outputs are possible via the AOD5 evaluation unit.
3) Output resistance 100 Ω, min. load 10 k Ω.

Electronics

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

- 1) DC 12 V (-5 %) ... DC 24 V (+10 %).

Mechanics

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

- 1) Includes 0.5 m cable.

Ambient data

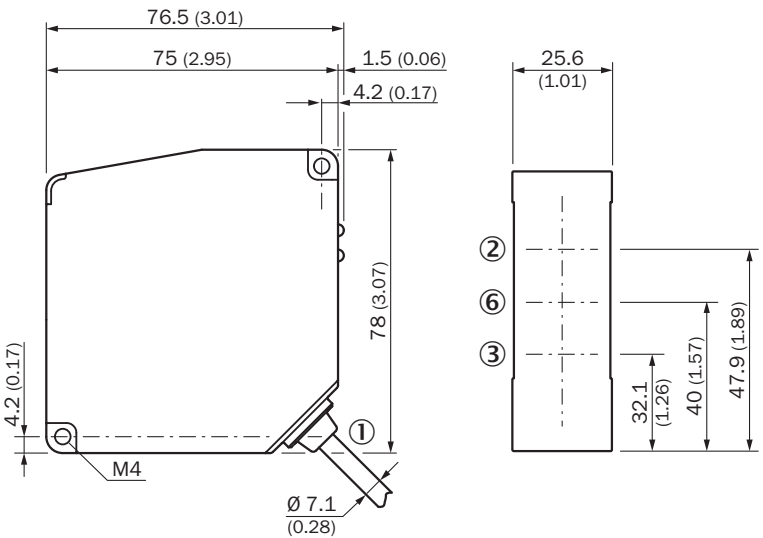
Ambient temperature, operation	-10 °C ... +50 °C
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Ambient temperature, storage	-20 °C ... +60 °C
Relative air humidity (non-condensing)	35 % ... 85 %
Temperature drift	± 0.01 % FS/K (FS = Full Scale = Measuring range of sensor)
Typ. Ambient light immunity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

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

Dimensional drawing OD5-25xxx



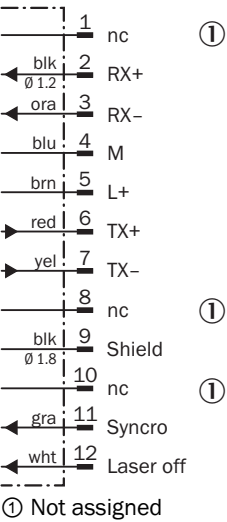
Dimensions in mm (inch)

- ① Cable Ø 7.1 mm, 0.5 m with connector, 12-pin
- ② optical axis, receiver
- ③ optical axis, sender
- ⑥ Optical axis, light spot (at 25 mm due to V-Optics with 17.5°)

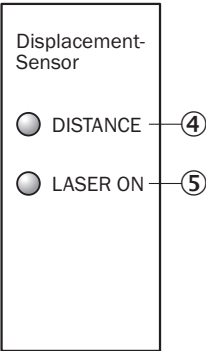
Connection type Hirose 12-pin male connector for sensor head



Connection diagram

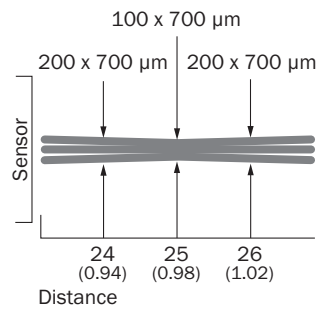


Adjustment possible



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

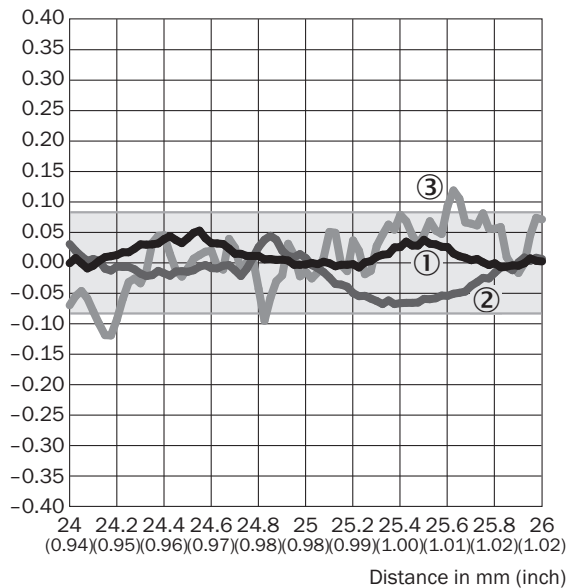
Light spot size OD5-25W01



All dimensions in mm (inch)

Linearity OD5-25W01

Linearity [%FS]



- ① Mirror
- ② Stone, ceramic, glass
- ③ stainless steel

Recommended accessories

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

	Brief description	Type	part no.
connectors and cables			
	Strich		On request
	• Connection type head A: Female connector, M12, 12-pin, straight • Connection type head B: Flying leads • Cable: 5 m, 12-wire, PVC • Description: Shielded • Note: For stand-alone operation	DOL-1212-G05M	6035988
	Strich		On request
	Strich		On request
	Strich		On request
integration modules and adapters			
	Strich		On request
	Strich		On request

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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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