



## Short range distance sensors (displacement) OD Precision, RS-422

OD5-25T01



**Model Name** > **OD5-25T01**  
**Part No.** > **6035975**

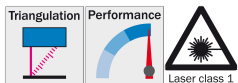


#### At a glance

- Many measurement ranges from 24 mm ... 26 mm up to 300 mm ... 700 mm
- CMOS receiving element for measurement independent of surface
- High measuring accuracy and frequency
- Glass thickness measurement with just one sensor head
- Different light spot sizes
- Integrated calculations for up to three sensors
- Stand alone use via RS-422

#### Your benefits

- Non-contact measurement improves quality inspection during production
- Surface-independent measurement algorithms ensure minimum machine downtime, regardless of surface gloss or color
- Reduced processing times as a result of the high measuring frequency of up to 10 kHz
- Simple, cost-effective solution for challenging measuring tasks due to a variety of sensor models
- Optional stand-alone operation via RS-422 means the OD Precision offers maximum performance at lower investment costs
- High visibility LC display enables simple, cost-effective setup
- Many interfaces for simple integration into an existing production environment



#### Features

System part: Sensor head

#### Performance

|                                   |                                                              |
|-----------------------------------|--------------------------------------------------------------|
| Measuring range:                  | 24 mm ... 26 mm, 6 % ... 90 % remission; at default settings |
| Resolution:                       | 0.02 $\mu\text{m}$ <sup>1)</sup>                             |
| Repeatability:                    | 0.06 $\mu\text{m}$ <sup>2)</sup>                             |
| Linearity:                        | $\pm 1.6 \mu\text{m}$ <sup>3)</sup>                          |
| Response time <sup>4), 5)</sup> : | 0.1 ms                                                       |
| Measuring frequency:              | 10 kHz <sup>6)</sup>                                         |
| Light source:                     | Laser, red                                                   |
| Laser protection class:           | 1 (EN 60825-1) <sup>7)</sup>                                 |
| Typ. light spot size (distance):  | 25 $\mu\text{m}$ x 35 $\mu\text{m}$ (25 mm)                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Additional function:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Anti interference mode, Automatic sensitivity adjustment, Selectable measuring frequency (automatic/0.1 ms ... 3.2 ms), Glass thickness measurement, Manual sensitivity adjustment, Averaging settings 1 ... 4,096x |
| Output rate:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.1 ms                                                                                                                                                                                                              |
| Note:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OD Precision sensor head can be used with AOD5-P/N1 or stand-alone via RS-422                                                                                                                                       |
| <sup>1)</sup> Measurement on 90 % remission (ceramic, white), for OD25-x measurement on mirror; averaging set to: 256, for OD25-x: 4096 <sup>2)</sup> Measurement on 90 % remission (ceramic, white), for OD25-x measurement on mirror; averaging set to: 256, for OD25-x: 4096; constant ambient conditions <sup>3)</sup> Measurement on 90 % remission (ceramic, white), for OD5-25x measurement on mirror; averaging set to: 4096 <sup>4)</sup> Time needed for automatic sensitivity adjustment is calculated as: sampling period x 20.<br>At default setting 100 µs (10kHz) this is ≤ 2ms. <sup>5) 6)</sup> Default setting for OD5-350x100 and OD5-500x200 = 0.8 ms, 1.25 kHz likewise, all other types = 0.1 ms/10 kHz<br><sup>7)</sup> Wave length 650 nm, max. output 390 µW |                                                                                                                                                                                                                     |

## Interfaces

|                  |               |
|------------------|---------------|
| Data interface:  | RS-422        |
| Laser off input: | 1 x laser-off |

## Mechanics/electronics

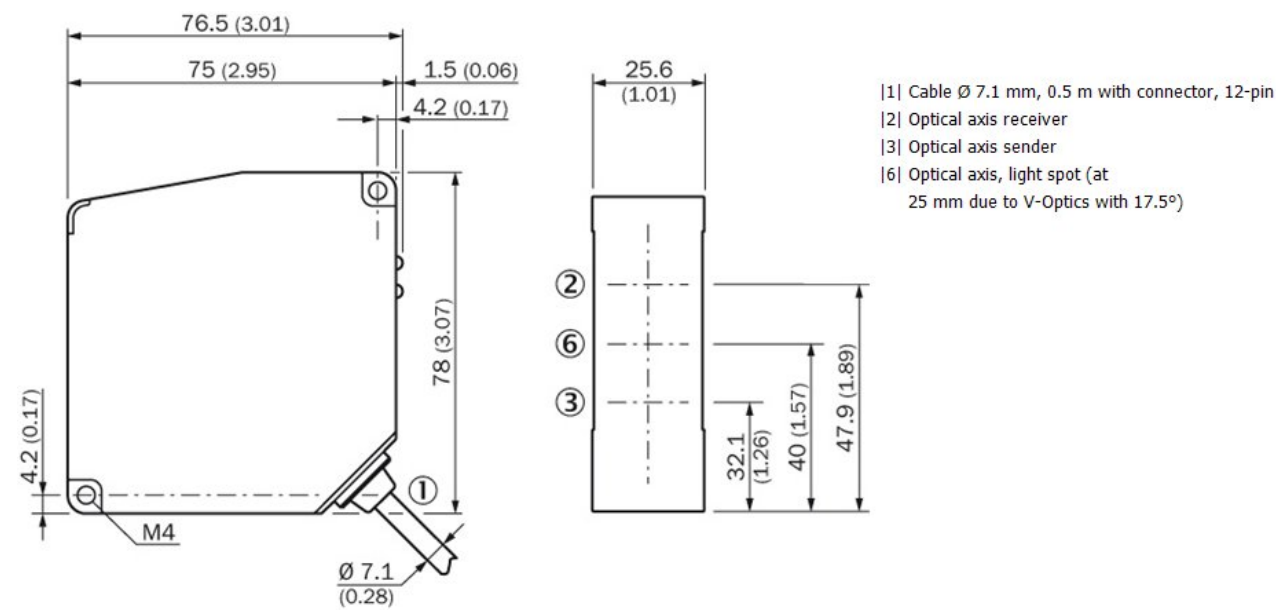
|                                   |                                                    |
|-----------------------------------|----------------------------------------------------|
| Connection type:                  | 0.5 m cable with connector <sup>1)</sup>           |
| Supply voltage Vs <sup>2)</sup> : | DC 12 V ... 24 V                                   |
| Warm-up time:                     | ≤ 5 min                                            |
| Indication:                       | LEDs, 4" color-display on optional controller unit |
| Weight:                           | 250 g <sup>3)</sup>                                |
| Housing material:                 | Aluminum housing with glass lens                   |

<sup>1)</sup> Extensible by cable to max. 50 m <sup>2)</sup> DC 12 V (-5 %) ... DC 24 V (+10 %) <sup>3)</sup> Inclusive 0.5 m cable

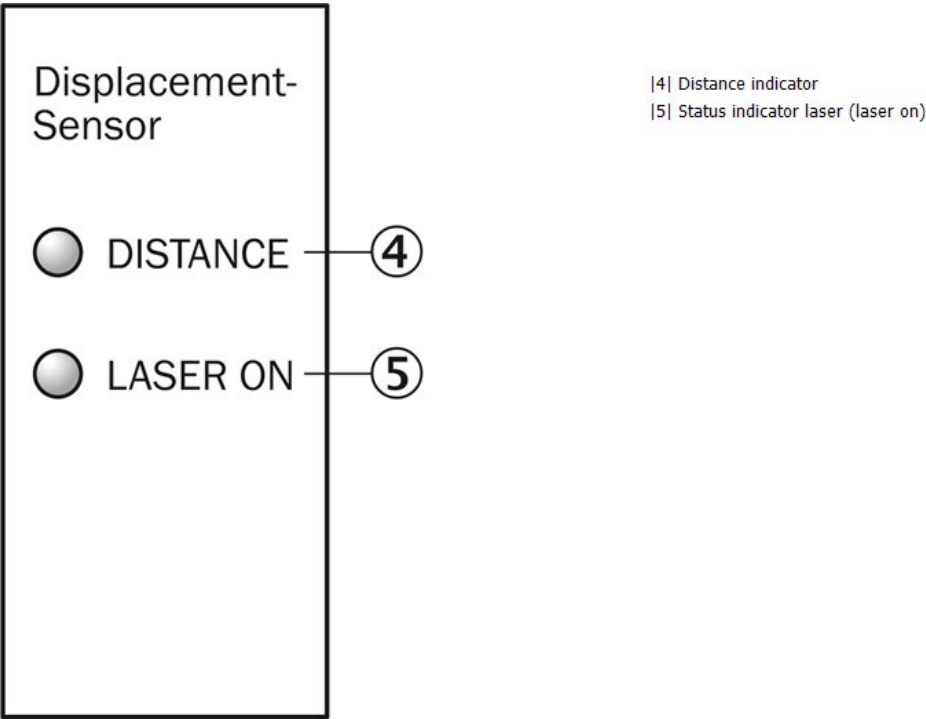
## Ambient data

|                                     |                                                                 |
|-------------------------------------|-----------------------------------------------------------------|
| Enclosure rating:                   | IP 67                                                           |
| Protection class:                   | III                                                             |
| Ambient temperature:                | Operation: -10 ... 50 °C, Storage: -20 ... 60 °C                |
| Temperature drift:                  | ± 0.01 % FS/K (FS = Full Scale = Measuring range of sensor)     |
| Typ. ambient light safety:          | Artificial light: ≤ 3,000 lx<br>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)                              |
| Relative humidity (not condensing): | 35 % ... 85 %                                                   |

Dimensional drawing



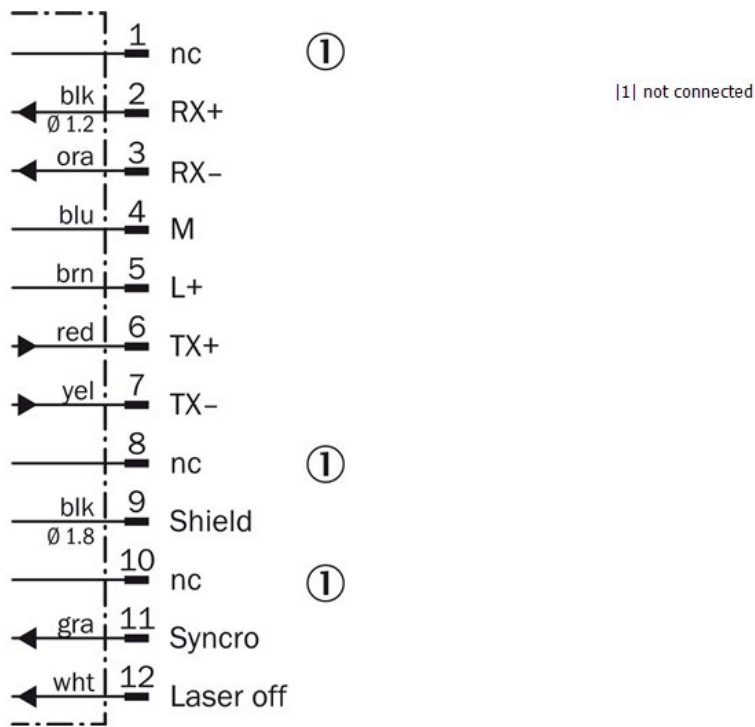
Adjustment possible



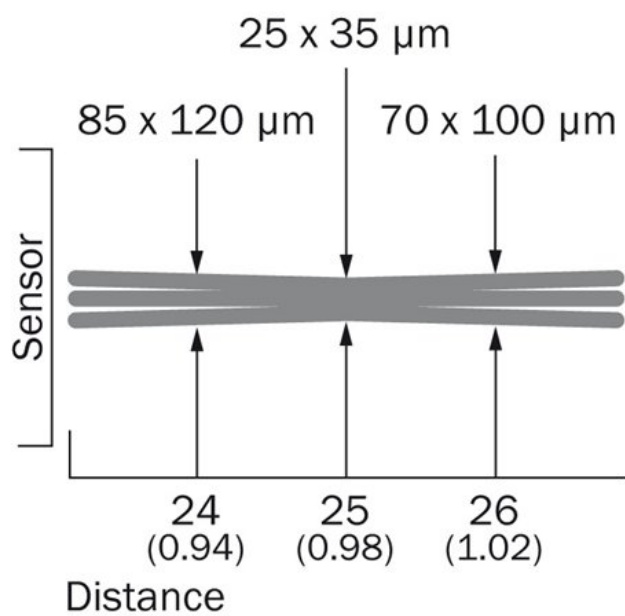
Connection type



Connection diagram

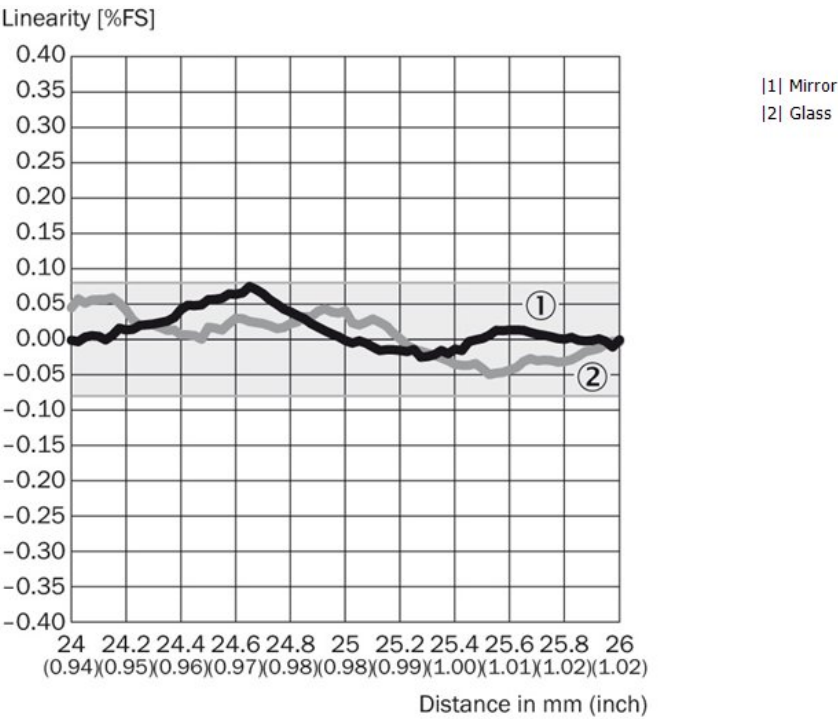


Light spot size



All dimensions in mm (inch)

Linearity



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