



## Short range distance sensors (displacement) OD Precision

AOD5-N1



**Model Name** > **AOD5-N1**  
**Part No.** > **6035984**

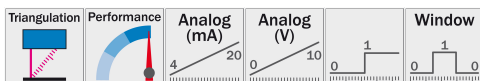


#### At a glance

- 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: Controller unit

#### Performance

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measuring frequency: | 10 kHz 1.25 kHz <sup>1)</sup>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Light source:        | Laser, red                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Additional function: | 16 memory banks, Anti interference mode, Arithmetic calculations, Automatic sensitivity adjustment, Teach-in of analog outputs, Teach-in of switching outputs, Set hysteresis, Selectable measuring frequency (automatic/0.1 ms ... 3.2 ms), Frequency filters, Glass thickness measurement, Hold functions, Peak measurement, Manual sensitivity adjustment, Averaging settings 1 ... 4,096x, Switching window, Peak to peak measurement, Timer functions |
| 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> Depending on connected sensor head; averaging deactivated; sensitivity set manually

## Interfaces

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|                                             |                                                                                                 |
|---------------------------------------------|-------------------------------------------------------------------------------------------------|
| Data interface:                             | RS-232<br>USB                                                                                   |
| Output type <sup>1)</sup> ; <sup>2)</sup> : | 5 x NPN (100 mA)                                                                                |
| Analog output:                              | 3 x -10 ... +10 V ( $\geq 10\text{ k}\Omega$ ), 3 x 4 mA ... 20 mA ( $\leq 300\text{ }\Omega$ ) |
| Resolution analog output:                   | 16 bit                                                                                          |
| Error output (max. output current):         | 3 x alarm <sup>3)</sup>                                                                         |
| Reference input:                            | 4 x zero-ref <sup>4)</sup>                                                                      |
| Inputs for memory bank selection:           | 4 x bank <sup>5)</sup>                                                                          |
| Laser off input:                            | 3 x laser-off <sup>6)</sup>                                                                     |
| Hold input:                                 | 4 x hold, 1 x hold-reset <sup>7)</sup>                                                          |

<sup>1)</sup> PNP: HIGH =  $V_S - (< 2\text{ V})$ /LOW =  $< 2\text{ V}$ ; NPN: HIGH =  $< 2\text{ V}$ /LOW =  $V_S$  <sup>2) 3) 4) 5) 6) 7)</sup> With use of external 50-pin terminal (accessories)

## Mechanics/electronics

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|                                      |                           |
|--------------------------------------|---------------------------|
| Connection type:                     | Terminal board            |
| Supply voltage $V_S$ <sup>1)</sup> : | DC 12 V ... 24 V          |
| Power consumption <sup>2)</sup> :    | $\leq 10.8\text{ W}$      |
| Warm-up time:                        | $\leq 5\text{ min}$       |
| Indication:                          | 4" color display          |
| Weight:                              | 550 g <sup>3)</sup>       |
| Housing material:                    | Polycarbonat and nylon 66 |

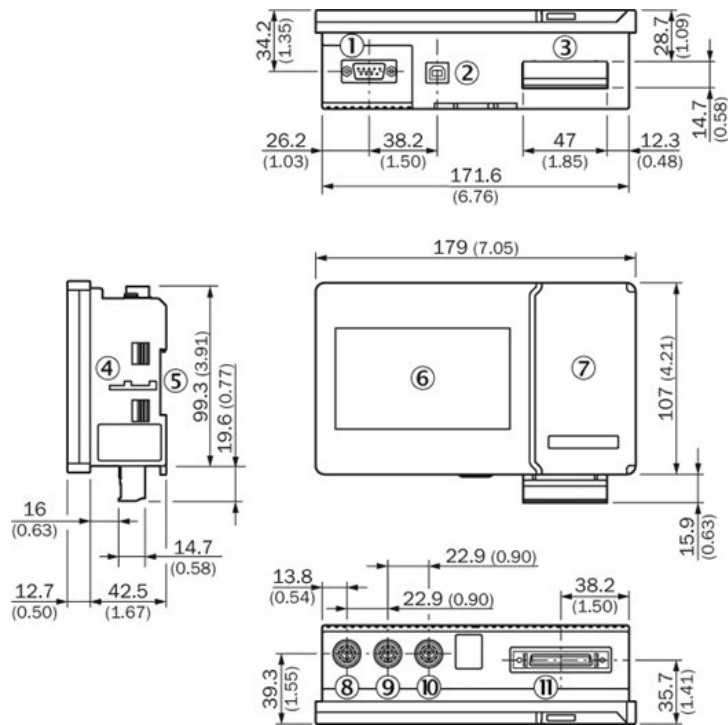
<sup>1)</sup> DC 12 V (-5 %) ... DC 24 V (+10 %) <sup>2)</sup> When connected with three sensor heads, incl. analog current output <sup>3)</sup> Inclusive terminal board

## Ambient data

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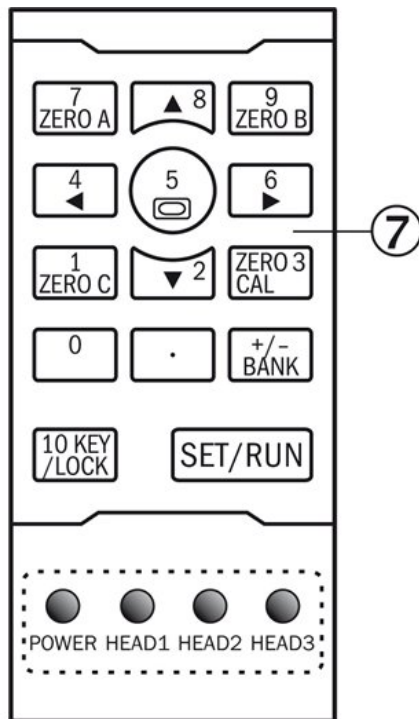
|                                     |                                                                 |
|-------------------------------------|-----------------------------------------------------------------|
| Enclosure rating:                   | IP 20                                                           |
| Protection class:                   | III                                                             |
| Ambient temperature:                | Operation: -10 ... +45 °C, Storage: -20 ... +60 °C              |
| Vibration resistance:               | 10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each) |
| Shock resistance:                   | 20 G (x-, y-, z-axis 3 times each)                              |
| Relative humidity (not condensing): | 35 % ... 85 %                                                   |

## Dimensional drawing

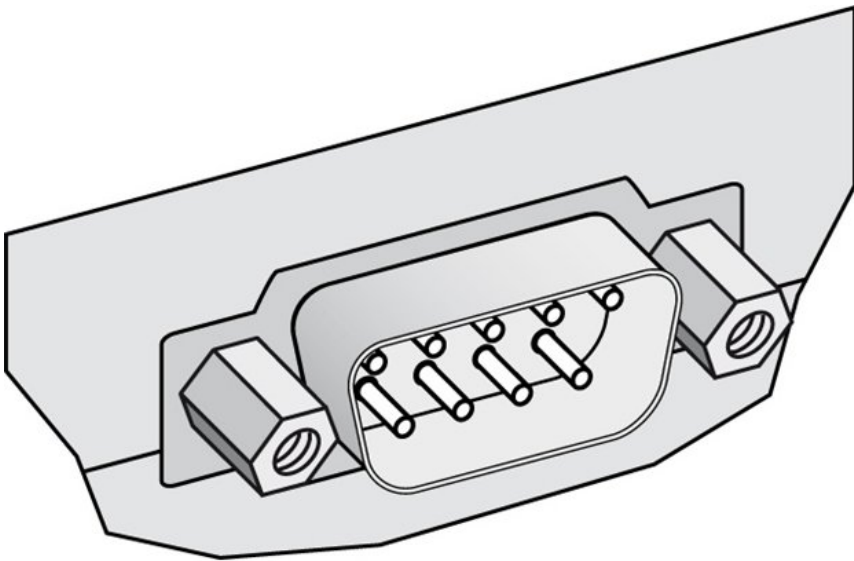


- |1| RS-232C interface
- |2| USB interface
- |3| terminal board (detachable)
- |4| for panel mounting bracket  
(recommended window size 173 mm x 102 mm)
- |5| DIN rail mounting
- |6| LC display
- |7| Control elements
- |8| sensor head A connection port
- |9| sensor head B connection port
- |10| sensor head C connection port
- |11| External input and output  
terminal (see accessories IO-EXP-AOD5)

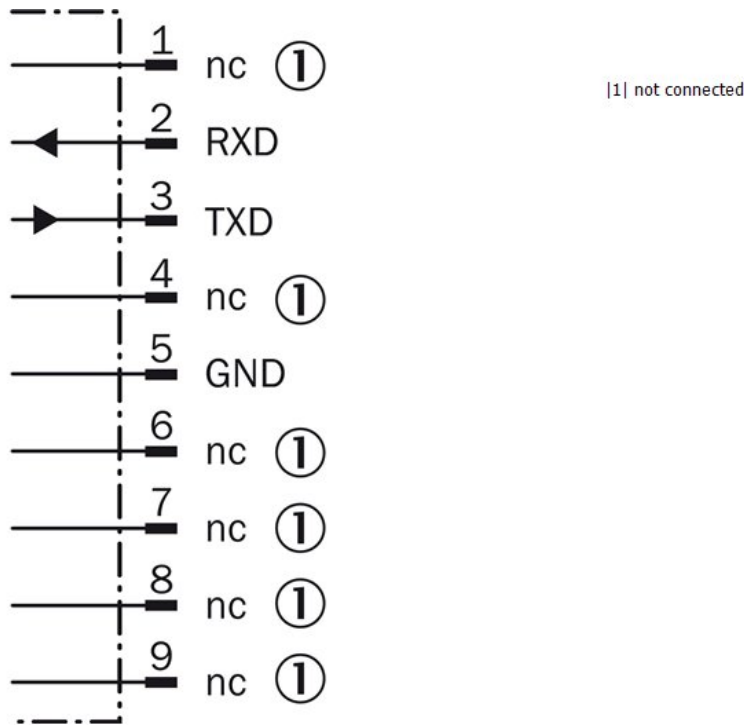
## Adjustment possible



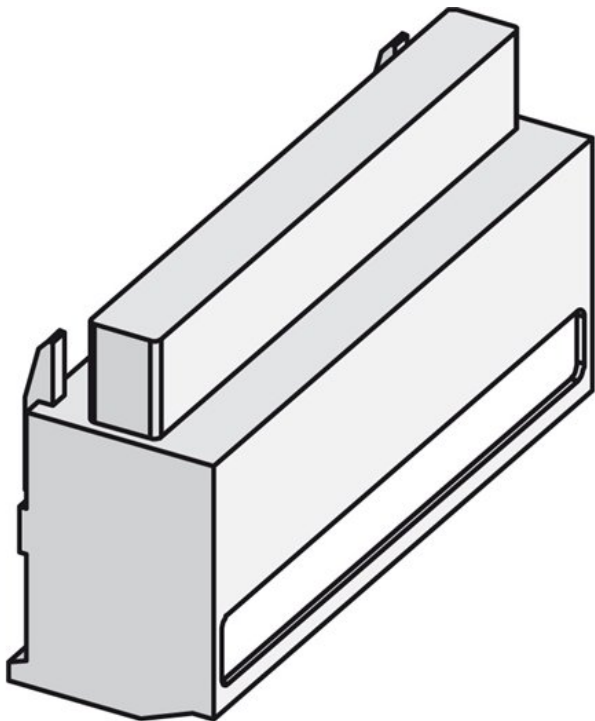
- |7| Control elements



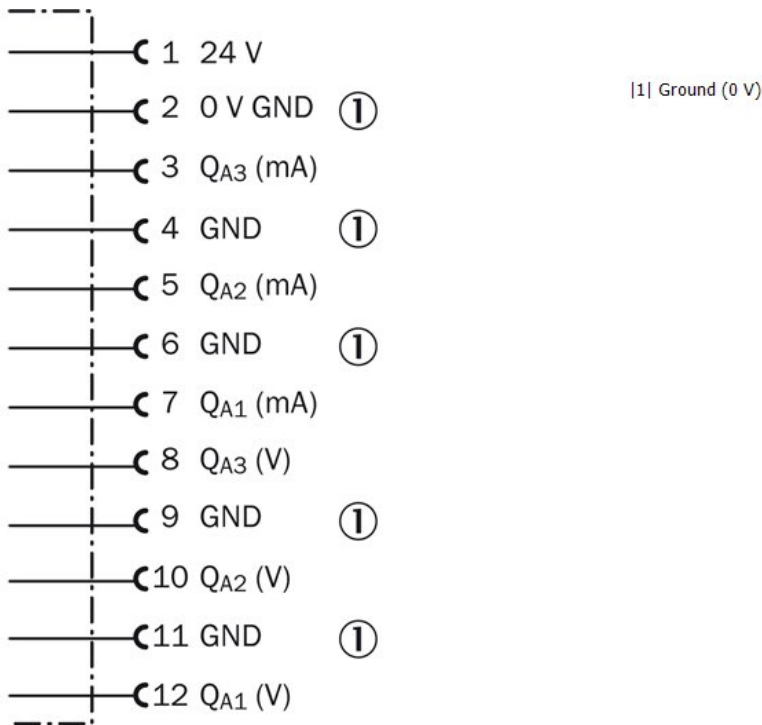
Connection diagram RS-232C



Connection type terminal board



Connection diagramm terminal board



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