



## Specifications

### Optical data

|                                 |   |
|---------------------------------|---|
| Measurement range <sup>1)</sup> | 120 ... 1400mm                          |
| Resolution <sup>2)</sup>        | 0.1 ... 0.5mm                           |
| Light source                    | LED                                     |
| Wavelength                      | 880nm (infrared light)                  |
| Light spot                      | approx. 15 x 15mm <sup>2</sup> at 600mm |

### Error limits (relative to measurement distance)

|   |                                       |
|---|---------------------------------------|
| Absolute measurement accuracy <sup>1)</sup> | ± 1.5% up to 800mm, ± 2% up to 1400mm |
| Repeatability <sup>3)</sup>                 | ± 0.5% up to 800mm, ± 1% up to 1400mm |
| b/w detect. thresholds (6 ... 90% rem.)     | ≤ 1% up to 800mm, ≤ 2% up to 1400mm   |
| Temperature compensation                    | yes <sup>4)</sup>                     |

### Timing

|                             |                          |
|-----------------------------|--------------------------|
| Measurement time            | 1 ... 5 <sup>1)</sup> ms |
| Response time <sup>1)</sup> | ≤ 15ms                   |
| Delay before start-up       | ≤ 300ms                  |

### Electrical data

|  |   |
|--|---|
| Operating voltage U <sub>B</sub> <sup>5)</sup> | 18 ... 30VDC (incl. residual ripple)  |
| Residual ripple                                | ≤ 15% of U <sub>B</sub>   |
| Open-circuit current                           | ≤ 150mA   |
| Switching output                               | push-pull switching output <sup>6)</sup> ,<br>PNP light switching, NPN dark switching |
| Signal voltage high/low                        | ≥ (U <sub>B</sub> -2 V)/≤ 2V  |
| Analogue output                                | current 4 ... 20mA, R <sub>L</sub> ≤ 500Ω   |

### Indicators

|            |                  |  |                                   |
|------------|------------------|--|-----------------------------------|
| Green LED  | continuous light | <b>teach-in on GND</b>                       | <b>teach-in on +U<sub>B</sub></b> |
|            | flashing         | ready  |                                   |
|            | off              | fault  | teaching procedure                |
| Yellow LED | continuous light | no voltage                                   |                                   |
|            | flashing         | object inside teach-in measurement distance  | teaching procedure                |
|            | off              | object outside teach-in measurement distance |                                   |

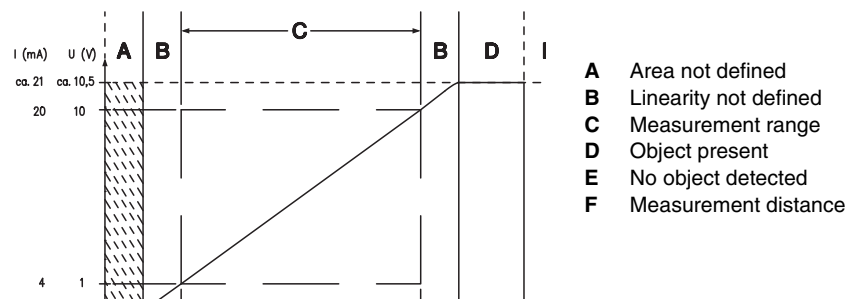
### Mechanical data

|                 |                |
|-----------------|----------------|
| Housing         | diecast zinc   |
| Optics cover    | glass          |
| Weight          | 380g           |
| Connection type | M 12 connector |

### Environmental data

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| Ambient temp. (operation/storage) | -20°C ... +50°C / -30°C ... +70°C |
| Protective circuit <sup>7)</sup>  | 1, 2, 3                           |
| VDE safety class <sup>8)</sup>    | II, all-insulated                 |
| Protection class                  | IP 67, IP 69K <sup>9)</sup>       |
| LED class                         | 1 (acc. to EN 60825-1)            |
| Standards applied                 | IEC 60947-5-2                     |

- 1) Luminosity coefficient 6% ... 90%, complete measurement range, at 20°C, medium range of U<sub>B</sub>, measurement object ≥ 50x50mm<sup>2</sup>
- 2) Minimum and maximum value depend on measurement distance
- 3) Same object, identical environmental conditions, measurement object ≥ 50x50mm<sup>2</sup>
- 4) Typ. ± 0.02 %/K
- 5) For UL applications: for use in class 2 circuits according to NEC only
- 6) The push-pull switching outputs must not be connected in parallel
- 7) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs
- 8) Rating voltage 250VAC, with cover closed
- 9) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives. Acids and bases are not part of the test.



## Order guide

|                           | Designation           | Part No.  |
|---------------------------|-----------------------|-----------|
| <b>With M12 connector</b> |                       |           |
| Current output            | ODS 96B M/V6-1400-S12 | 501 10231 |

## Tables

## Diagrams

## Remarks

- Measurement time depends on the reflectivity of the measurement object and on the measurement mode.
- **Approved purpose:** The ODS 96B distance sensors are optical electronic sensors for the optical, contactless measurement of distance to objects.