

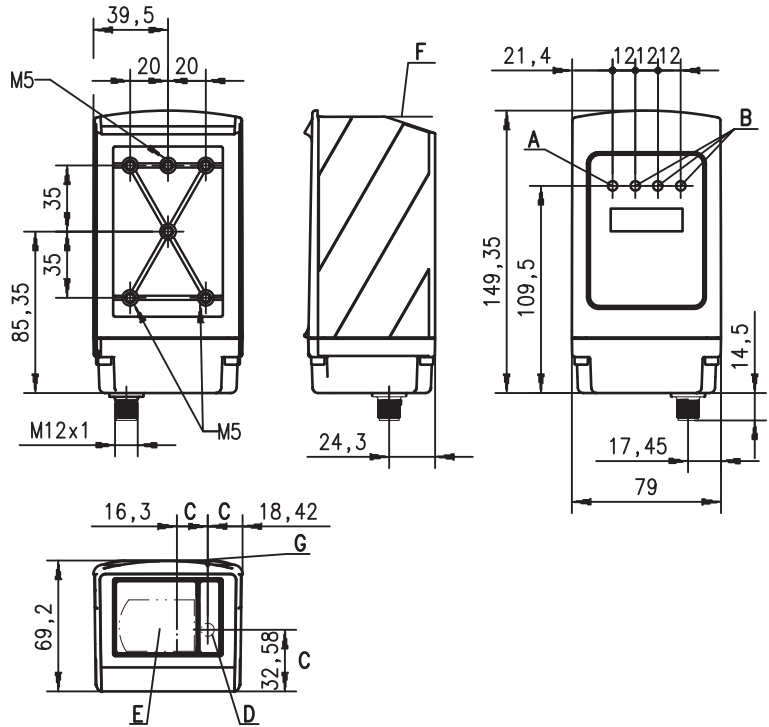
ODSL 30

Optical laser distance sensors

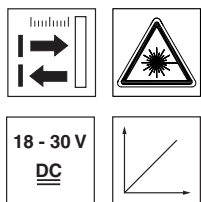
Part No. 501 09360



Dimensioned drawing



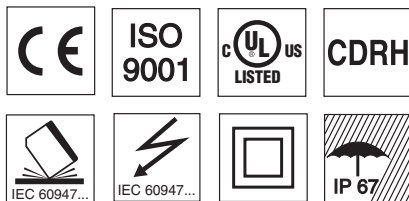
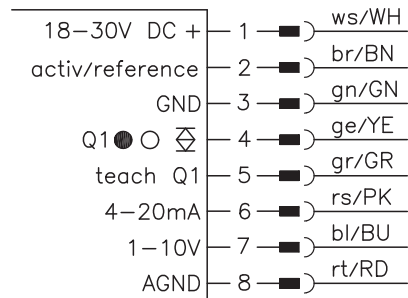
- A** 1 green indicator diode / ready
- B** 3 yellow indicator diodes / switching outputs Q1, Q2, Q3
- C** Optical axes
- D** Transmitter
- E** Receiver
- F** Reference edge for the measurement (distance zero point)
- G** Sight for coarse alignment



0.2 ... 30m

- Reflection-independent distance information
- High accuracy through referencing
- Analogue current and voltage output
- 1 teachable analogue and switching output
- LC display and key pad for configuration
- Measurement value is indicated in mm on LC display
- M12 connector
- Mounting device included

Electrical connection



Accessories:

(available separately)

- Ready-made cable K-D M12A-8P-2m-PUR
- Co-operative Target CTS 100x100 (reflectivity 50 ... 90%)

We reserve the right to make changes * ods_13gb.fm

Specifications

Optical data

| | |
|---------------------------------|-----------------------------|
| Measurement range ¹⁾ | 0.2 ... 30m (adjustable) |
| Resolution ²⁾ | 0.1mm/1mm (factory setting) |
| Light source | laser |
| Wavelength | 650nm (visible red light) |
| Light spot | divergent, Ø 6mm at 10m |
| Laser warning notice | see remarks |

Error limits for current output, relative to measurement range end value ³⁾

| | |
|---|---|
| Absolute measurement accuracy ¹⁾ | measurement range up to 2.5m: ± 2% without referencing, ± 1% with referencing measurement range 2.5m up to 5m: ± 1.5% without referencing, ± 1% with referencing measurement range 5m up to 30m: ± 1% without referencing, ± 1% with referencing ± 0.5% of measurement value typ. 0.5mm/°C (without referencing) |
| Repeatability ⁴⁾ | |
| Temperature drift | |

Timing

| | |
|--------------------------------|---------------------------------------|
| Measurement time ⁵⁾ | 30 ... 100ms (factory setting: 100ms) |
| Delay before start-up | ≤ 1s |

Electrical data

| | |
|-------------------------|---|
| Operating voltage U_B | 18 ... 30VDC (incl. residual ripple) |
| Residual ripple | ≤ 15% of U_B |
| Power consumption | ≤ 4W |
| Switching output | PNP transistor, HIGH active (default), NPN transistor or push-pull through configuration |
| Signal voltage high/low | ≥ ($U_B - 2V$) / ≤ 2V |
| Analogue output | $R_L \geq 2k\Omega$ (voltage) $R_L \leq 500\Omega$ (current) |

Indicators

| | | |
|------------|------------------|--|
| Green LED | continuous light | ready |
| | off | no voltage |
| Yellow LED | continuous light | object inside teach-in measurement distance |
| | off | object outside teach-in measurement distance |

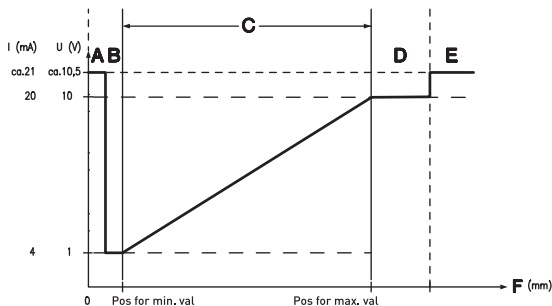
Mechanical data

| | |
|-----------------|----------------------|
| Housing | metal |
| Optics cover | glass |
| Weight | 650g |
| Connection type | M12 connector, 8-pin |

Environmental data

| | |
|-----------------------------------|-----------------------------------|
| Ambient temp. (operation/storage) | -10°C ... +45°C / -40°C ... +70°C |
| Protective circuit ⁶⁾ | 2, 3 |
| VDE safety class ⁷⁾ | II, all-insulated |
| Protection class | IP 67 |
| Laser class | 2 (acc. to EN 60825-1) |
| Standards applied | IEC 60947-5-2 |

- 1) Luminosity coefficient 6% ... 90%, temperature range 0°C ... +45°C
- 2) Display and output resolution 0.1mm configurable
- 3) In the temperature range of 0°C ... +45°C, measurement object ≥ 50x50mm²; at temperatures < 0°C different error limits apply
- 4) Same object, identical environmental conditions
- 5) Configurable, depends on the reflectivity of the object and on the max. detection range
- 6) 2=polarity reversal protection, 3=short-circuit protection for all outputs
- 7) Rating voltage 250VAC



- A** Short range (no signal)
- B** Object present
- C** Measurement range
- D** Object present
- E** No object present (no signal)
- F** Measurement distance

Remarks

- **Measurement time:** configurable, depends on the reflectivity of the object and on the measurement mode.
- **Teaching procedure (factory setting):** Position measurement object at the desired measurement distance. Apply $+U_B$ to the teach input. Take teach input back to GND, switching output has now been taught. Edge on line **teach Q1** teaches output Q1. During the teaching of Q1, yellow LED Q1 will flash.
- **Activation/referencing input:** Referencing is carried out by applying the voltage (for a duration of about 300ms). If this process is activated before the measurement, the highest possible accuracy is achieved.
- The enclosed laser warning signs must be attached to the sensor or in its immediate vicinity such that they are well visible.
- **Approved purpose:** The ODSL 30 distance sensors are optical electronic sensors for the optical, contactless measurement of distance to objects.

| | |
|---|-------|
| LASER LIGHT DO NOT STARE INTO BEAM | |
| Maximum Output: | 4mW |
| Pulse duration: | 267ns |
| Wavelength: | 655nm |
| CLASS 2 LASER PRODUCT IEC 60825-1:1993+A2:2001 Complies with 21 CFR 1040.10 | |

Order guide

| | Designation | Part No. |
|----------------------|-------------------|-----------|
| M12 connector | ODSL 30/V-30M-S12 | 500 39447 |