

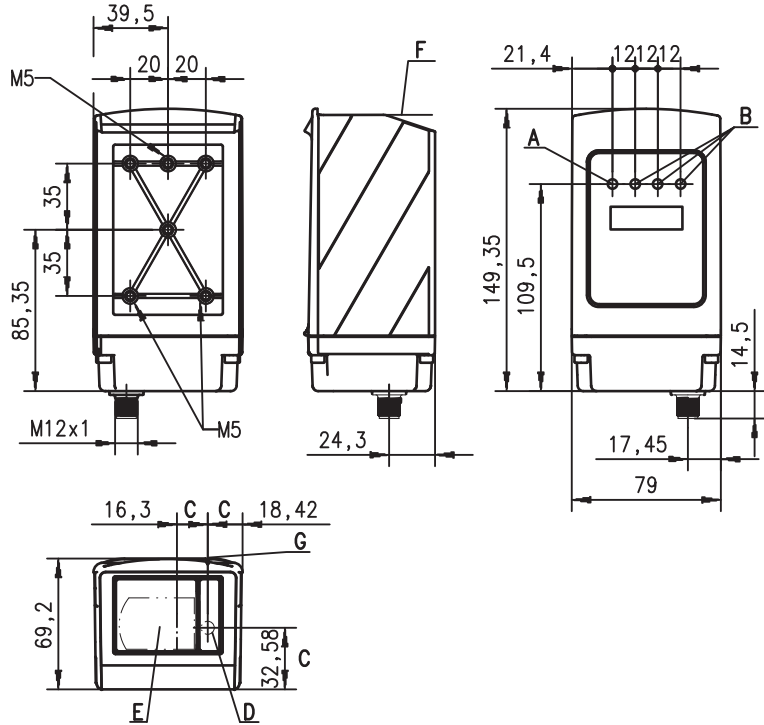
**ODSL 30**

**Optical laser distance sensors**

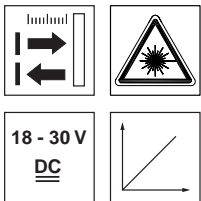
Part No. 501 09360



**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

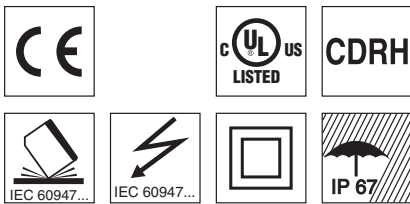


**0.2 ... 30m**

- 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**

18-30V DC +	1	ws/WH
activ/reference	2	br/BN
GND	3	gn/GN
Q1 ● ○ ⊗	4	ge/YE
teach Q1	5	gr/GR
4-20mA	6	rs/PK
1-10V	7	bl/BU
AGND	8	rt/RD



**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\_13en.fm

## Specifications

### Optical data

Measurement range <sup>1)</sup>	0.2 ... 30m (adjustable)
Resolution <sup>2)</sup>	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 <sup>3)</sup>

Absolute measurement accuracy <sup>1)</sup>	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 <sup>4)</sup>	
Temperature drift	

### Timing

Measurement time <sup>5)</sup>	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

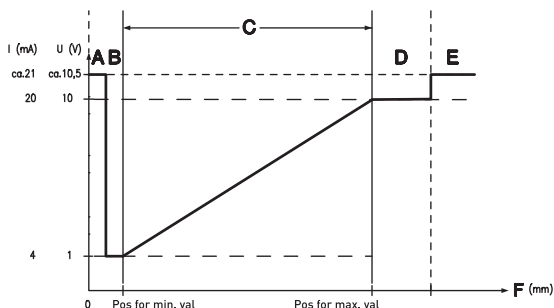
### Mechanical data

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 <sup>6)</sup>	2, 3
VDE safety class <sup>7)</sup>	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  $\geq 50 \times 50 \text{mm}^2$ ; 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