

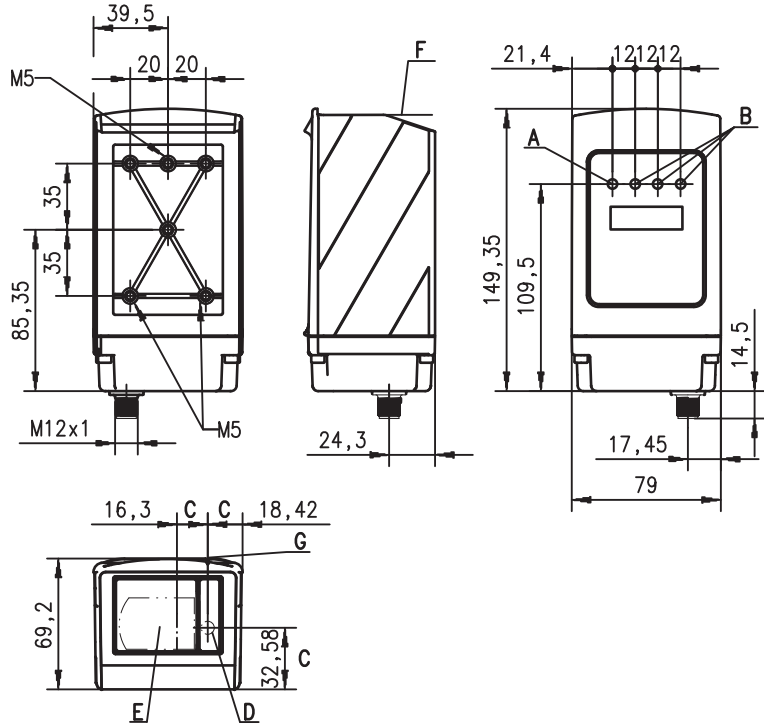
ODSL 30

Optical laser distance sensors

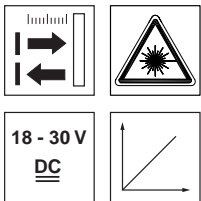
Part No. 501 09360



Dimensioned drawing



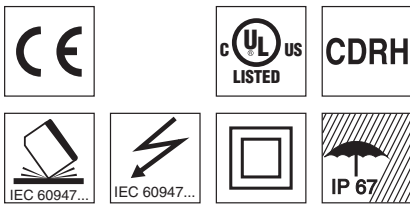
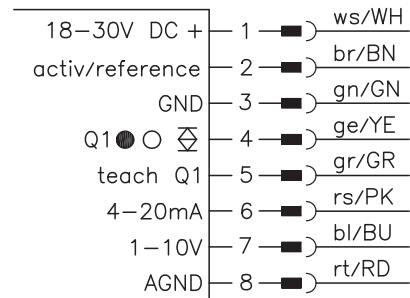
- A 1 green indicator diode / ready
- B 3 yellow indicator diodes / switching outputs Q1, Q2, Q3
- C Optical axes
- D Transmitter
- E Receiver
- F Reference edge for the measurement (distance zero point)
- G Sight for coarse alignment



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_13en.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
Repeatability ⁴⁾	typ. 0.5mm/°C (without referencing)
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

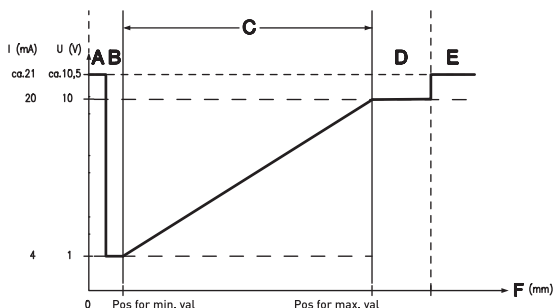
Mechanical data

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 $\geq 50 \times 50 \text{mm}^2$; 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