

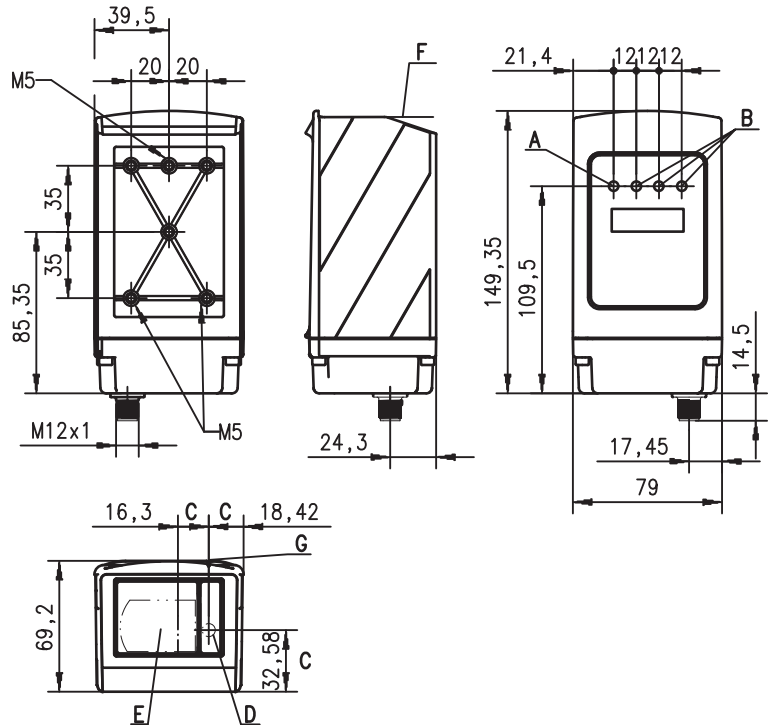
**ODSL 30**

**Optical laser distance sensors**

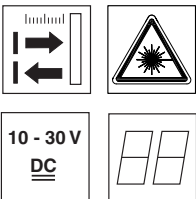
Part No. 501 08371



**Dimensioned drawing**



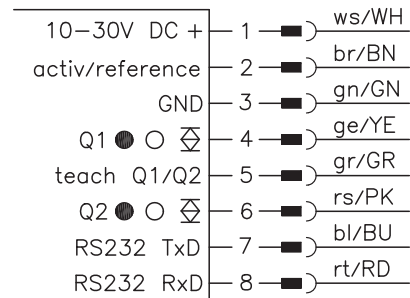
- A 1 green indicator diode / ready
- B 3 yellow indicator diodes / switching outputs Q1, Q2, Q3
- C Optical axes
- D Transmitter
- E Receiver
- F Reference edge for the measurement (distance zero point)
- G Sight for coarse alignment



**0.2 ... 30m**

- Reflection-independent distance information
- High accuracy through referencing
- RS 232 interface
- 2 teachable switching outputs
- LC display and key pad for configuration
- Measurement value is indicated in mm on LC display
- M12 connector
- Mounting device included
- Connection option for a coupling module, e.g. for Profibus

**Electrical connection**

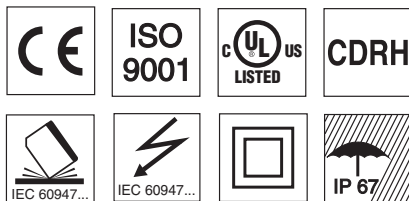


**Accessories:**

(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\_16gb.fm



**Specifications**

**Optical data**

Measurement range <sup>1)</sup>	0.2 ... 30m <sup>1b)</sup>
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 <sup>3)</sup>**

Absolute measurement accuracy <sup>1)</sup>	± 5mm (6 ... 90% diffuse reflection) ± 2mm (90% diffuse reflection) after referencing
Repeatability <sup>4)</sup>	± 2mm (6 ... 90% diffuse reflection)
Temperature drift	typ. 0.5mm/°C (without referencing)

**Timing**

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

**Electrical data**

Operating voltage $U_B$	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of $U_B$
Power consumption	≤ 4W
Switching outputs	PNP transistor, HIGH active (default), NPN transistor or push-pull through configuration
Signal voltage high/low	≥ ( $U_B$ -2 V)/≤ 2V
Serial interface	RS 232, 9600Baud default setting

**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
- 1b)ODSL 30/D... up to 65m, luminosity coefficient 50% ... 90%
- 2) Display and output resolution 0.1mm configurable
- 3) In the temperature range of 0°C ... +45°C, measurement object ≥ 50x50mm<sup>2</sup>; 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

**Approved purpose:**

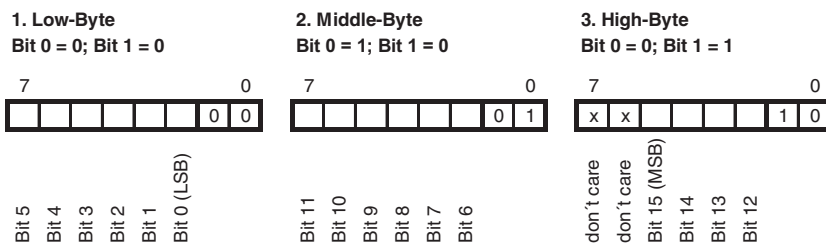
The ODSL 30 distance sensors are optical electronic sensors for the optical, contactless measurement of distance to objects.

**Example 1: ASCII transmission of the measurement value**

Transmission format: **MMMMM<CR>**

- MMMMM** = 5-digit measurement value
- <CR>** = ASCII character "Carriage Return" (x0D)

**Example 2: measurement value = 16 Bit**



**Order guide**

	Designation	Part No.
<b>With M12 connector</b>	ODSL 30/D 232-30M-S12	500 41203

**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. First edge on line **teach Q1/Q2** teaches output Q1, second edge teaches Q2. During the teaching of Q1, the yellow LED Q1 will flash. During the teaching of Q2, the yellow LED Q2 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.
- Possible protocols for the serial interface, selectable through configuration.
  1. Distance output in ASCII
  2. Measurement value=14/16/20 bit (measurement distance up to 15000mm at a resolution of 1mm / 30000mm at a resolution of 1mm / 30000mm at a resolution of 0.1mm)
  3. Remote control, ASCII transfer of the measurement value on request:  
4 bytes (measurement distance up to 9900mm),  
5/6 bytes (measurement distance up to 30000mm).
- The enclosed laser warning signs must be attached to the sensor or in its immediate vicinity such that they are well visible.

