



Laser-Triangulation with CMOS-Technology

## Laser-Distance-Sensor

### Series LDS 70/232

- **Measuring range** 5-200 mm (7 versions)
- **Resolution** 0.6-40  $\mu\text{m}^*$
- **Outputs** 4-20 mA / 1-5 VDC / RS232
- **Sampling rate** 1000 Hz
- **Small dimensions** (65 x 50 x 20) mm

#### Basic features:

- Center distance **25 - 160 mm**
- Resolution typ. **0.6-40  $\mu\text{m}^*$**
- Analogue output **4- 20 mA**  
optional: 1-5 VDC with integrated shunt in connection cable
- RS232 interface
- High linearity
- Colour insensitive measurement
- Laser Class 2
- Protection IP 67
- **CE**

(\* depends on version)

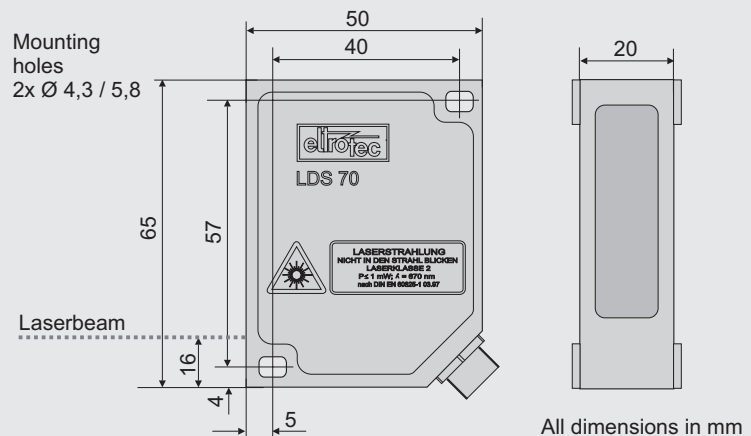
#### Typical applications:

- Distance measurement
- Thickness measurement
- Displacement measuring
- Profile checking
- Out-of-balance measurement
- Control of overlapping
- Position control
- Cone belt measurement
- Stroke, oscillation

#### Advantages:

- Small dimensions
- High resolution
- High linearity
- Wide dynamic range
- High insensitive to colour due to CMOS-Technology and intern. digital signal processor with intelligent logic
- Vibration resistance 15 g/ (10 Hz - 1 kHz)

### Dimensions



### Wiring connections

Pin	Colour	Reference
1	gn	Error output, open collector NPN; switching to GND, U <sub>ce</sub> max. 30 VDC, 100 mA, short circuit protected
2	ye	Laser ON/OFF connect pin 2+6 => Laser ON
3	bl	Rx 232
4	pink	Tx 232
5	gr	Output 4-20 mA, short circuit protected
6	bn	GND
7	wt	Supply 12-30 VDC inverse polarity protected
---		Shield (PE)

### Description

The Laser Triangulation Sensor LDS 70 is based on latest CMOS technology. It is working with a visible red laser. The measuring values are linearised by an internal signal processor. Due to this the sensor measures the distance very accurate and independent from colour of surface. The LDS 70 provides an analogue output with 4-20 mA. Optional there is a connection cable with shunt for 1-5 VDC output available. The RS232 interface is included.

## Technical data

<b>Electrical data</b>	Supply voltage	12-30 VDC, typ. 24 VDC, 150 mA
	Frequency	1 kHz
	Analogue output	4-20 mA (option: 1-5 VDC)
<b>Light source</b>	Wavelength	typ. 670 nm, visible/red
	Power	< 1 mW
	Laser Class	2 DIN (EN 60825-1:11.01)
<b>Data on ambience conditions</b>	max. operating temp.	0 to +55 °C (+32 to +130 °F)
	max. storage temp.	-20 to + 70 °C (-4 to +158 °F)
	Protection class	IP 67
	EMC	EN 50081-1 , EN 61000-6-2

Specific data	Sensor LDS 70/...					
	5	10	20	50	100	200**
<b>Measuring range</b>	5 mm	10 mm	20 mm	50 mm	100 mm	200 mm
<b>Center distance</b>	22.5 mm	25 mm	40 mm	70 mm	100 mm	160 mm
<b>Linearity typ.</b>	+/- 5 µm	+/- 10 µm	+/- 20 µm	+/- 50 µm	+/- 100 µm	+/- 400 µm
<b>Resolution*stat.(typ.) dyn. at 1 kHz</b>	0.6 µm	1 µm	2 µm	5 µm	20 µm	40 µm
	3 µm	5 µm	10 µm	25 µm	100 µm	200 µm
<b>Meas. area Ø typ. at center distance</b>	~0.5 mm	~0.8 mm	~0.3 mm	~0.1 mm	~0.1 mm	~2 mm
<b>Temp. stability</b>	0.03 % of measuring range / °C				0.08 % o.m.r. / °C	

\* All values at white, diffuse reflecting surfaces (AL<sub>2</sub>O<sub>3</sub>- ceramic) as reference

## Ordering information

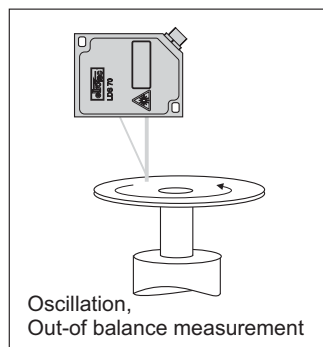
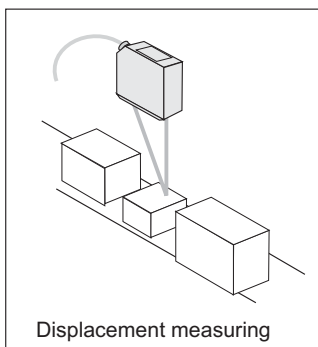
LDS70/232	5	10	20	50	100	200
<b>Part No.</b>	<b>10652789</b>	<b>10652849</b>	<b>10652841</b>	<b>10652850</b>	<b>10652848</b>	<b>10652635</b>

plug connector included

\*\* 250 mm measuring range available, see datasheet LDS 70/250-F, RS232 see user manual

Cable length:3 m, plug M12, 7-pin, output 4-20 mA and RS232 (6 m optional)	11242835
Cable length:3 m, plug M12, 7-pin, output 1-5 VDCand RS232 (6 m optional)	11242836
Cable length:3 m, plug M12, 7-pin, output 4-20 mA, 9pin Sub-D RS232 connector	11242790

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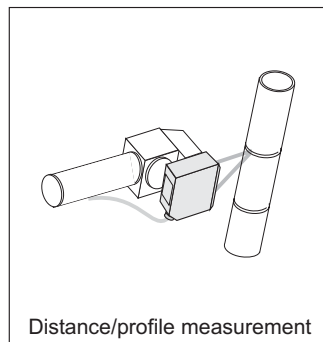
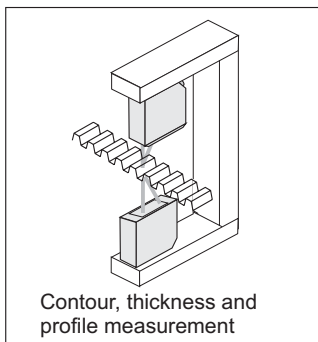




**LASER CLASS 2**  
**DIN EN 60825-1: 11.01**

**Laser radiation**  
**Avoid exposure to beam**

Sensors of CLASS 2 don't need  
environment with special protection



Presented by:

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