



Laser-Distance-Sensor

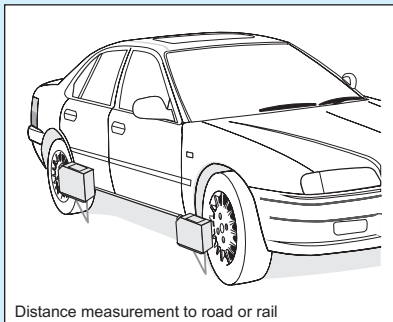
Series LDS 70/250-F

- **Measuring range** 250 mm
- **Resolution** $\geq 50 \mu\text{m}$
- **Measuring frequency** 1000 Hz
- **Small dimensions** (65 x 50 x 20) mm
- **High shock resistance** $\sim 20\text{g}$

Principal features:

- Measuring distance **100 - 350 mm**
- Resolution typ. $\geq 50 \mu\text{m}$
- Analogue output **4- 20 mA**
optional: 1-5 VDC with integrated shunt in connection cable
- RS232 optional
- High linearity
- Laser Class 2
- Protection IP 67
- CE

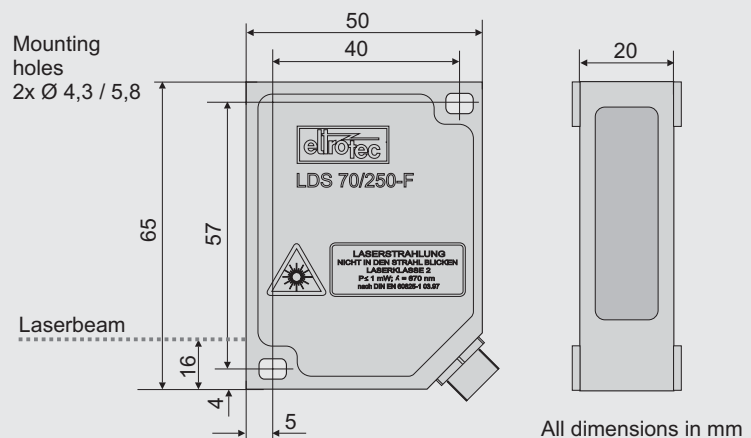
Typical applications:



Advantages:

- Small dimensions
- High resolution
- High linearity
- Wide dynamic range
- Insensitive to colour and surface due to special interference optic
- Vibration resistance 20g
- **Extremely resistance sensor for online distance measurement "car to road" or "train to rail"**

Dimensions



Wiring connections

Pin	Colour	Reference
1	gn	Error output, open collector NPN; switching to GND, U _{ce} max. 30 VDC, 100 mA, short circuit protected
2	ge	Laser ON/OFF connect pin 2+ 4 => Laser ON
3	gr	Output 4-20 mA, short circuit protected
4	bn	GND Potential for (2) and U _b (5)
5	ws	Supply 11-30 VDC inverse polarity protected
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Description

The Lasertriangulation Sensor LDS 70 is based on latest CCD-technology. It is working with a visible red laser. The measuring values are linearised by a internal signal processor. Due to this the sensor measures the distance very accurate and independent from colour of surface. The LDS 70/250-F provides an analogue output with 4-20 mA. Optional there is a connection cable with shunt for 1-5 VDC output available. Special application is, to measure distance car body to road or train body to rail.

Technical data

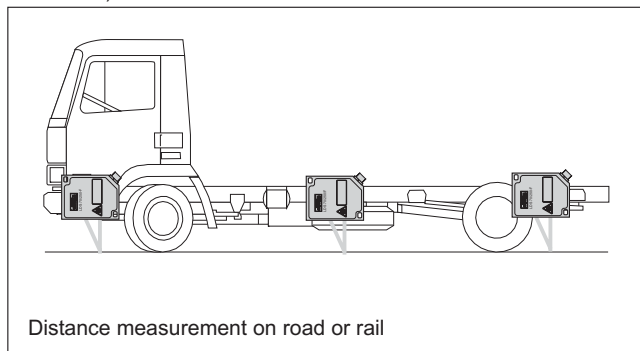
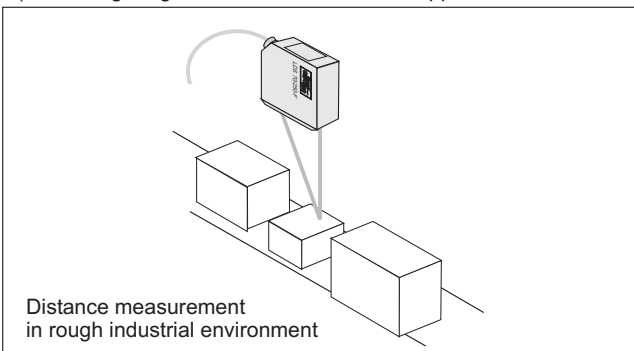
Electrical data	Supply voltage	11-30 VDC, typ. 24 VDC, 150 mA
	Frequency	1000 Hz
	Analogue output	4-20 mA (option: 1-5 VDC/ 2-10 VDC with shunt)
Light source	Wavelength	typ. 670 nm, visible/red
	Power	< 1 mW (IEC standard)
	Laser Class	2 DIN (EN 60825-1:03.97)
Data on ambiente conditions	max. operating temp.	0 to +55 °C
	max. storage temp.	-20 to +70 °C
	Protection	IP 67
	max. permis. daylight	<7000 Lux diffus reflection of sunlight
	EMV	EN 50081-1 , EN 50082-2
Measuring	Measuring range	250 mm
	Center distance	225 mm +/- 125 mm
	Linearity typ.	+/- 0.5 % +/- 0.6 mm
Resolution	stat. (typ.)	~ 50 µm
	dyn. at 1kHz (typ.)	~300 µm
Measuring area	typ.	0.15 - 8 mm Ø start range- end range
	at center dist. (typ.)	~ 4 mm Ø
Temperature	Temperature stability	0.08 % of measuring range / °C

All values at white, diffuse reflektive surfaces (AL₂O₃- ceramic) as reference

Ordering information

Distance sensor	Part No.
LDS 70/250-F	10652634
Cable length 3 m, 5-pin, output 4-20 mA	11242514
Cable length 3 m, 5-pin, output 1-5 VDC	11242515
Cable length 6 m, 5-pin, output 4-20 mA	11242516

(Measuring range 5-200 mm for standard applications see datasheet LDS 70)



LASER CLASS 2
DIN EN 60825-1: 03.97

Laser radiation
Avoid exposure to beam

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

Presented by: