



Laser Distance Sensor

Series LT

- **Range** 25, 70, 250 mm
- **Status display, RS 232 Interface**
- **Analogue output** 0-10 VDC or 4-20 mA
- **Resolution** 10, 50, 300 μm

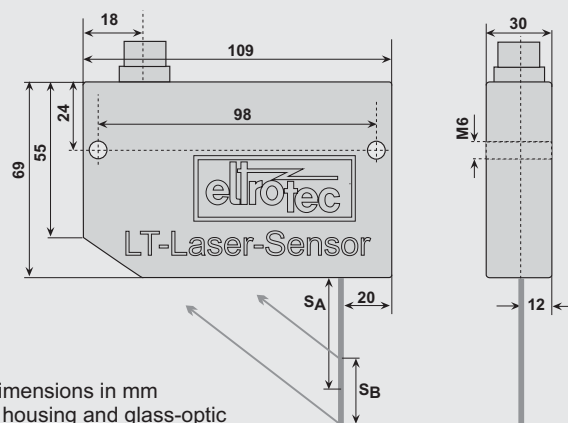
Principal features:

- CDD receiver
- DSP processor
- RS232 interface
- Operating state indication by LEDs
- Output for operation state indication
- Analogue output
either **0-10 V**
or **4-20 mA**
- Resolution **10, 50, 300 μm**
- Spot diameter **15-300 μm**
- Laser protection CLASS 2
- High linearity due to digital signal processing (internal)
- Insensitive to contrast and colour transition due to special evaluation algorithm
- Protection type IP 54
- Optimum price / efficiency ratio
- **CE**

Typical applications:

- Distance control
- Thickness measurement
- Displacement measurement
- Profile checking
- Detection of fractures and cracks
- Out-of-balance measurement
- Positional control
- Detection of overlapping
- Basic distance sensor for mounting and handling
- For positioning of robot-arms

Dimensions



Wiring connections



Pinning out

- | | |
|--------------------------------|-------------------------------|
| 1 Rx Data | 5 System OK (NPN) |
| 2 Tx Data | 6 Analogue OUT |
| 3 GND | 7 +U _B (15-28 VDC) |
| 4 Error indicator (NPN output) | 8 GND |

Description

The Laser Triangulation Sensor series LT has been developed as a compact unit for a wide variety of applications. Independent of the materials shape, surface and colour, the sensor measures distances with high precision using the triangulation principle. The LT has a laser diode which produces a light spot on the measured object. The object reflects the scattered light which is delineated by an optical system to the sensor. If the distance from the measured object to the sensor varies, the position of the reflected light on the sensor shifts. Each position of the image on the sensor corresponds to a particular distance between the measured object and the sensor. Evaluation of the image on the sensor and the necessary linearisation is carried out by a processor. Quality of signal and readiness for operation are indicated by easily visible LEDs ("System:Test OK" and "No definite signal"). These signals are provided with NPN-switching outputs and are transmitted via interface. The sensor has a standard RS232 interface and an analogue output (0-10 V or 4-20 mA).

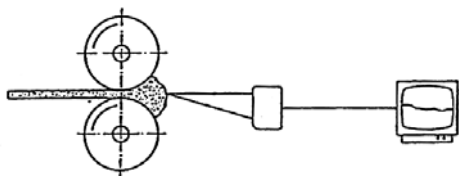
Technical Data

Specific data		LT45/25	LT100/70	LT225/250
	Measurement range S_B	25 mm	70 mm	250 mm
	Center distance S_A	45 mm	100 mm	225 mm
	Resolution	≤ 0.01 mm	≤ 0.05 mm	≤ 0.3 mm
	Max. deviation from linearity over 90% of measurement range	± 0.05 mm	± 0.1 mm	± 0.3 mm <small>near range</small> ± 0.7 mm <small>far range</small>
	Light spot diameter in the centre of measurement range	≥ 0.015 mm		
	Permis. degree of reflection	~ 5-95 %		
Electrical data	Operating voltage U_B	15-28 VDC (residual ripple < 10 %)		
	Current consumption	~ 100 mA		
	Measurement sequence frequency	312 Hz		
	Analogue output, Interface	Interface RS232 (option RS 485) Analogue 0-10 VDC or 4-20 mA Signal "Sensor OK" (test passed, LED green) Signal "No definite signal" (LED red)		
Data on radiation source	Wavelength	~ 670 nm		
	Output	< 1 mW		
	Laser protection class	2 (EN 60825-1:1994)		
Data on ambiente conditions	Permis. operating temperat.	0 to +50 °C		
	Permis. relative humidity	90 % non-condensing		
	Degree of protection	IP 54		
Mechanical data	Dimensions	110 x 70 x 30 mm		
	Weight	approx. 260 g		
	Connection	via Binder plug series 680, type 09-0069-08 (plug socket included in shipment)		

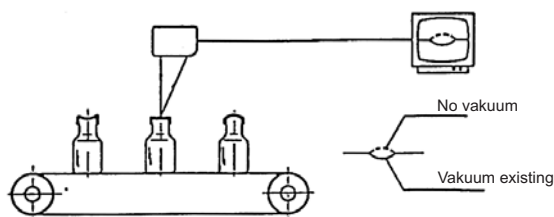
Ordering information

Sensor type (RS232)	Part No.	Sensor type (RS232)	Part No.
LT 45/25 (0-10VDC)	10640196	LT 45/25 (4-20 mA)	10641311
LT 100/70 (0-10VDC)	10640197	LT 100/70 (4-20 mA)	10640201
LT 225/250 (0-10VDC)	10640233	LT 225/250 (4-20 mA)	10641425

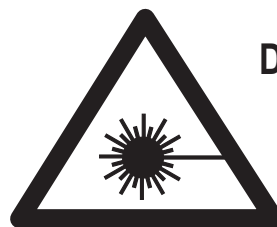
Applications



Monitoring of material inventory



Monitoring on bottle plants (e.g. checking for vakuüm)



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: