

sensor data sheet

LASE 1000T GREY-LINE SERIES

The distance sensors of the LASE 1000T Grey-Line Series are optical measuring instruments which work according to the triangulation principle. This technique ensures highest accuracies within μm of range:

- » Measurement length, width, height, level and position of objects
- » Positioning of machine parts
- » Quality control of paper, steel or aluminium coils
- » Slab width and thickness measurement
- » Measurement of liquid levels and solid materials
- » Measurement and regulation of slack

THE SENSOR

The sensors from the LASE 1000T Grey-Line Series are contactless one-dimensional distance meters especially built for the operation in harsh industrial environments.

The sensors out of the LASE 1000T Grey-Line Series are typically used for contactless distance, thickness or width measurements. The devices produce a visible laser point onto an object while the relative position of this laser point is evaluated by a high resolution CCD line camera. From the position of this point along the CCD line, the distance is computed to the object. Due to this procedure an accuracy of up to 0,001 mm depending on its measuring range can be achieved and the range on natural surfaces amounts to max. 170 mm. The sensors incorporate an automatic regulation of the light intensity and thereby provide unsurpassed measuring characteristics.

The LASE 1000T Sensor Series in general are compact units because of the fact that all optical elements are integrated with the electronic components in a highly durable aluminium housing. The sensors do not contain mobile parts and are appropriate for measurement tasks in heavy industrial environments and where precision demands have to be better than 1 mm, e.g. at thickness measurements or quality controls.



SCOPE OF DELIVERY

- » Sensor
- » Operating instruction
- » Configuration Software

THE FEATURES

- ✓ Contactless distance measurement
- ✓ Measuring area up to 100 mm
- ✓ Measurement range up to 170 mm
- ✓ High measuring rate (up to 2 kHz)
- ✓ Interfaces: analog, digital (RS 232 or RS 422)
- ✓ Rugged construction type to IP 65

THE BENEFITS

- ✓ Highest accuracy in the μm -area
- ✓ Suitable for measurements on nearly all surfaces
- ✓ Simple installation at each position
- ✓ Closed-loop control of light intensity

TECHNICAL DATA: LASE 1000T GREY-LINE SERIES

LASE 1000T	-72.5	-75	-82.5	-95	-120
DISTANCE MEASUREMENT					
Measuring range	70 - 75 mm	70 - 80 mm	70 - 95 mm	70 - 120 mm	70 - 170 mm
Center distance	72,5 mm	75 mm	82,5 mm	95 mm	120 mm
Spot size	Ø 0,2 mm	Ø 0,3 mm		Ø 0,4 mm	
Laser safety class ¹	IEC 2				
SCAN AND PROFILE MEASUREMENT					
Resolution (at short range) ²	0,001 mm				
Resolution (at long range) ²	0,001 mm		0,002 mm		0,005 mm
Linearity ²	± 0,003 mm	± 0,004 mm	± 0,008 mm	± 0,013 mm	± 0,025 mm
Temperature deviation (0° ... 40° C)	± 1,5 µ/C°		± 2,5 µ/C°	± 5 µ/C°	± 10 µ/C°
Measuring frequency ²	2 / 1 kHz				
Wave length	655 nm				
INTERFACES					
Analog ³	4-20 mA				
	1-9 V				
Digital ⁴	RS 232 or RS 422				
ELECTRICAL & MECHANICAL					
Power supply	24 V DC ± 10 %				
Power consumption	max. 4,5 W				
Protection class	IP 65				
Dimensions	95 x 120 x 30 mm				
Weight	approx. 370 g				
ENVIRONMENT DATA					
Temperature range	operation: 0° ... 45° C 3 storage: -20° C ... +70° C				
Humidity	max. 90% relative humidity				

¹ Laser class IEC 3R at HT and VHT sensor series with a frequency of 1 or 2 kHz.

² Resolution, Linearity and Frequency valid for static measurements on white paper.

³ Analog output Resolution: 14 Bit DAC's are used for the conversion of the 18 bit digital distance result, an integer value with resolution of 0.001 mm.

