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

The sensors out of the LASE 1000T Green-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 ± 0.01 mm depending on its measuring range can be achieved and the range on natural surfaces amounts to max. 4000 mm. The sensors incorporate an automatic regulation of the light intensity and thereby provide unsurpassed measuring characteristics.

Sensors out of the LASE 1000T Series are very compact units because 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.

The distance sensors of the LASE 1000T-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 aluminum coils
- Slab width and thickness measurement
- Measurement of liquid levels and solid materials
- Measurement and regulation of slack

Features and Benefits:

- Contactless distance measurement
- Measuring area up to 2000 mm
- Measurement range up to 4000 mm
- Highest accuracy in the μm-area
- High resolution
- High measuring rate [up to 10 kHz]
- Synchronized thickness measurement with 2 sensors
- Interfaces: analog, digital [RS 232 or RS 422] and Ethernet
- Suitable for measurements on nearly all surfaces
- Median filter
- Simple installation at each position
- Rugged construction type to IP 65
- Closed-loop control of light intensity

Green-Line Series - Extended versions:

- HT-Version for target temperatures of up to 1000 °C
- VHT-Version for target temperatures of up to 1300 °C
- VVHT-Version for target temperatures of up to 2200 °C
- All HT-Versions are available with laser class 3R and 3B

Typical applications
DISTANCE MEASUREMENT

<table>
<thead>
<tr>
<th>Measuring range</th>
<th>400 - 600 mm</th>
<th>450 - 550 mm</th>
<th>600 - 800 mm</th>
<th>660 - 1250 mm</th>
<th>850 - 1600 mm</th>
<th>1000 - 1200 mm</th>
<th>7000 - 16000 mm</th>
<th>700 - 2100 mm</th>
<th>14000 mm</th>
<th>15000 - 24000 mm</th>
<th>20000 - 40000 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center distance</td>
<td>500 mm</td>
<td>700 mm</td>
<td>925 mm</td>
<td>950 mm</td>
<td>1100 mm</td>
<td>1150 mm</td>
<td>1400 mm</td>
<td>1950 mm</td>
<td>3000 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spot size Ø</td>
<td>2 mm</td>
<td>1 mm</td>
<td>2 mm</td>
<td>4 mm</td>
<td>2 mm</td>
<td>4 mm</td>
<td>5 mm</td>
<td></td>
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</tr>
<tr>
<td>Laser safety class</td>
<td>IEC 2</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

SCAN AND PROFILE MEASUREMENT

| Resolution    | 0.05 mm | 0.01 mm | 0.05 mm | 0.1 mm | 0.05 mm | 0.1 mm | 0.1 mm | 0.2 mm | 0.5 mm |
| Linearity ±    | ± 0.1 mm | ± 0.05 mm | ± 0.1 mm | ± 0.03 mm | ± 0.1 mm | ± 0.4 mm | ± 0.7 mm | ± 0.5 mm | ± 1 mm |
| Reproducibility| ± 0.05 mm | ± 0.01 mm | ± 0.05 mm | ± 0.1 mm | ± 0.05 mm | ± 0.1 mm | ± 0.3 mm | ± 0.2 mm | ± 0.5 mm |
| Measuring frequency | 1 kHz |             |             |                |             |             |                 |             |          |                 |                 |

INTERFACES

| Analog ±       | 4-20 mA | 1-9 V |
| Digital ±      | RS 232 or RS 422 |

ELECTRICAL & MECHANICAL

| Power supply   | 24 V DC ± 10 % |
| Power consumption | max. 4,5 W |
| Protection class | IP 65 |
| Dimensions     | 255 x 205 x 70 mm |
| Weight         | approx. 4500 g |

ENVIRONMENT DATA

| Temperature range | operation: 0°...45°C; storage: -20°...70°C |
| Humidity         | max. 90% relative humidity |

Declarations:

*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 Resolution, Linearity and Frequency valid for static measurements on white paper
*4 Analog output: 14 Bit DAC’s are used for the conversion of the digital distance result (nominal resolution 0.01 mm)

Scope of delivery:

- Sensor
- Operating Instruction
- Configuration Software

Contact

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