

# LDS70A

## Laser Distance Sensor

The LDS70A laser distance sensor is intended for general distance measurements that require extremely fast data acquisition.

It provides up to 40,000 centimeter-precise measuring values per second – up to 70 m without a reflector. With appropriate reflectors the LDS70A reaches objects at distances of up to 270 m.

The sensor has been optimized for easy system integration and has a shock-proof and impact-resistant IP 67 housing. Thus, it is most suitable for applications that impose high impact on the sensor, such as harsh industrial environments.

Due to the invisible and eye safe laser (905 nm) the LDS70A can also be used in public areas.

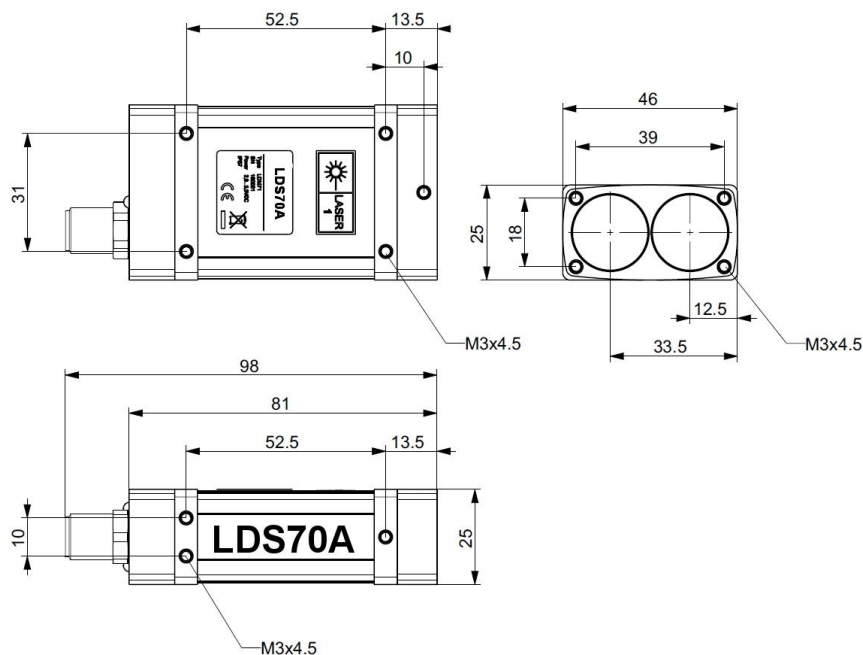


### Key Features

- Compact design, low weight
- Extremely high measuring rate
- Long measuring range
- Eye safe operation
- Housing in IP 67, shock-proof and impact-resistant
- Industrial interfaces
- Digital and analogue outputs
- Easy system integration

### Application

- Distance measurement
- Fast object detection
- Use as proximity switch
- 2D and 3D scanning applications
- Altimeter



## Technical Data

|   |   |
|---|---|
| Measurement principle                                 | Laser pulse - Time of flight measurement  |
| Measuring range                                       |   |
| Total range   | 0.2 m ... 270 m   |
| On target board <sup>1)</sup>                         | 0.5 m ... 270 m   |
| Onto natural surface, 80 % reflectivity <sup>2)</sup> | 0.2 m ... 125 m   |
| Onto natural surface, 10 % reflectivity <sup>2)</sup> | 0.2 m ... 70 m  |
| Measuring accuracy <sup>3)</sup>                      | ±60 mm (single measurement, 1 $\sigma$ )  |
| Repeatability <sup>1)</sup>                           | ±25 mm (1 $\sigma$ )  |
| Resolution  | 1 mm (decimal output $\leq$ 15 kHz)   |
| Maximum measuring rate                                | 40 kHz  |
| Laser wavelength                                      | 905 nm (invisible, near-infrared)   |
| Laser divergence                                      | 2 mrad x 0.4 mrad   |
| Laser class   | Laser class 1, EN 60825-1:2014  |
| Serial interface                                      | RS232 or RS422, Max. Baud rate 921600 baud/s                                    |
| Digital switching output                              | 2x "High-Side" switch, max load 0.2 A   |
| Analog output   | 4 mA ... 20 mA, programmable distance range                                     |
| Trigger   | 1x in/out, programmable delay   |
| Connector   | Standard M12, male connector, 12-pin, (e.g. Binder 713 series)                  |
| Measuring modes                                       | Single measurement, continuous measurement, programmable auto start             |
| Power supply  | 10 V DC ... 30 V DC   |
| Power consumption (maximum)                           | $\leq$ 3 W (without heating)  |
| Operating temperature                                 | -20° C ... +60 °C (without heating)<br>-40° C ... +60 °C (with enabled heating) |
| Storage temperature                                   | -40 °C ... +70 °C   |
| Humidity  | 10 % ... 90 %, non-condensing   |
| Integrated heating                                    | Yes, automatically controlled   |
| Protection class                                      | IP 67   |
| EMC   | EN 61326-1  |
| Shock / Vibration                                     | DIN ISO 9022-3  |
| Size (incl. connector)                                | 98 mm x 46 mm x 25 mm   |
| Weight  | 140 g   |
| MTTF  | > 5 years ( > 44.000 hours)   |

<sup>1)</sup> e.g. Scotchlite Cube 3000x

<sup>2)</sup> Dependent on target reflectance, influence of extraneous light and atmospheric conditions

<sup>3)</sup> Accuracy can be  $\pm$  100 mm for close-up ranges up to 1 m.