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LT1506-100K-HR675

LASER DISTANCE SENSOR

TECHNICAL SHEET

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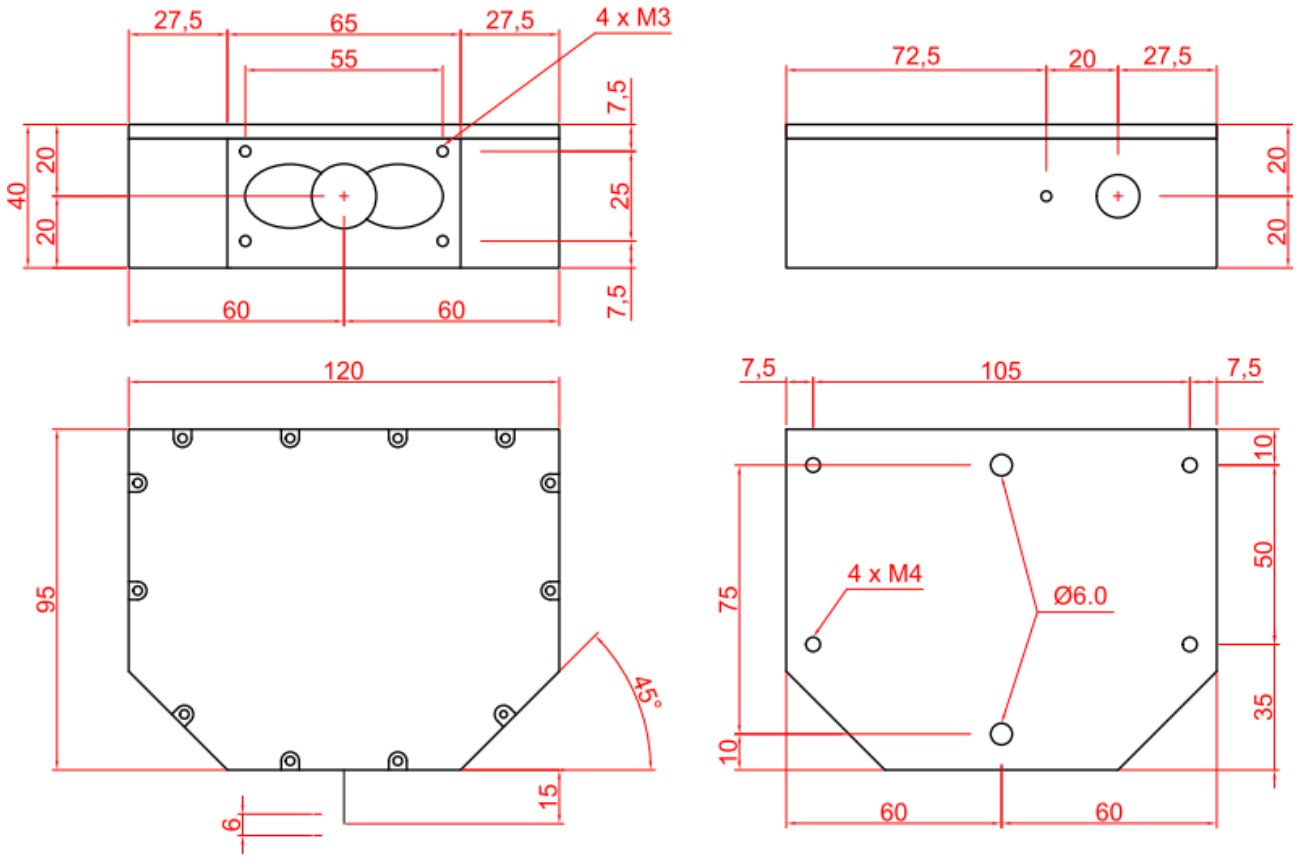
1 Sensor dimensions



2 Connections

- **Sensor side (FEMALE): LEMO EGG 1B 307 CLL**

- **Cable side (MALE): LEMO FGG.1B.307 (CLAD52)**

Table 1 - Connecting cable wiring

Pin	Color code	Type	Name	Description	Voltage ratings
1	Green	SUPPLY	GND	GND (voltage reference)	0 V
2	Brown	SUPPLY	VPOS	Positive supply voltage	+12 V < VPOS < +15 V
3	White	SUPPLY	VNEG	Negative supply voltage	-15 V > VNEG > -12 V
4	Green	SUPPLY	GND	GND (voltage reference)	0 V
5	Yellow	OUTPUT	X_OUT	Displacement* (analog)	+8.1 V @ x = 12.3 mm 0 V @ x = SOD = 15 mm -9.9 V @ x = 18.3 mm
6	Grey	OUTPUT	INTENSITY	Laser intensity (analog)	0…5 V
7	Pink	OUTPUT	ENABLE	out-of-range indicator (digital)	-0.7 V (in range) +4.7 V (out of range)

IMPORTANT NOTES

THE LASER SOURCE DOES NOT HAVE AN ON/OFF CONTROL:

IT STARTS EMITTING AT POWER UP

ATTENTION: CLASS 3B LASER PRODUCT

AVOID EXPOSURE TO BEAM, DO NOT STARE INTO THE LASER OUTPUT WINDOW AND TAKE CARE OF POSSIBLE REFLECTIONS FROM SPECULAR SURFACES

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3 Technical and Electrical Specifications

Stand-off Distance (SOD)	15 mm (0-Volt output)
Measuring range (MR)	6 mm (12.3 mm … 18.3 mm)
Sensitivity	3 mV/µm
Accuracy	+/- 5 µm
Resolution	0.5 µm
Bandwidth	100 kHz
Temperature Range	0 ÷ 50 °C
Humidity	Max 90 % non condensing
Weight	750 +/- 50 g

Laser radiation	Wavelength	675 ± 5 nm
	Maximum output power	30 mW
	Safety class (IEC 60825-1:2014)	3B
	Transverse resolution (laser beam diameter @ $1/e^2$)	40 µm @ SOD (< 100 µm full range)

MAX Power Consumption	5 W

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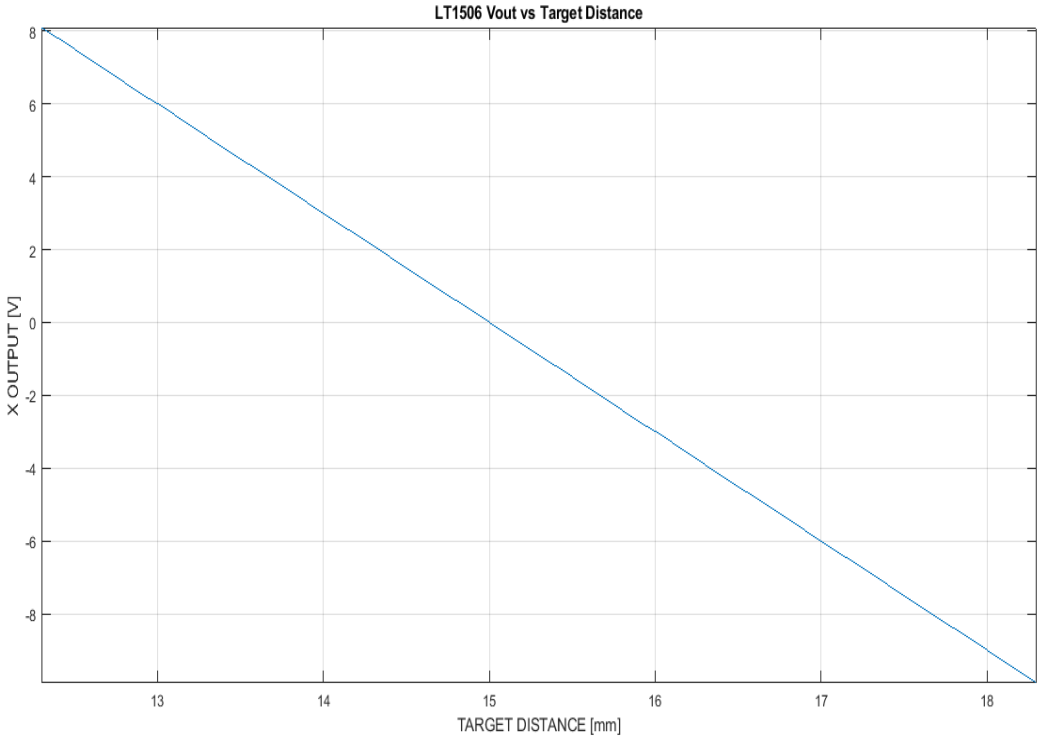
Output Voltage vs Target Distance



4 Laser Safety

This product is classified according to international standard IEC 60825-1:2014 - Safety of Laser Products, that describes handling and demands of laser products.

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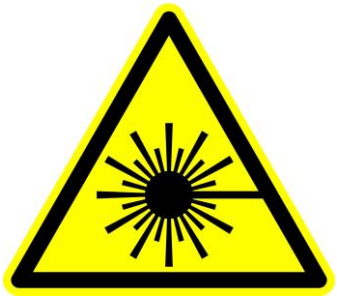
THE LT1506-100K-HR675 IS A CLASS 3B LASER PRODUCT
AVOID EXPOSURE TO THE LASER BEAM!



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Laser Classification (IEC 60825-1:2014)

Class 1 - Laser products which are normally safe under reasonably foreseeable conditions of use either because of the inherently low emission of the laser themselves (Pout < 1 mW), or because the wavelength of emission is not harmful for the human eye, or because they are totally enclosed and human access to higher levels of internal laser radiation is not possible during normal operation.

Class 1C – Laser products that are safe without viewing aids, lasers are designed explicitly for contact applications to the skin or non-ocular tissue.

Class 1M - Laser products which exceed the permitted accessible emission limits of Class 1, but which, because of the geometrical spread of the emitted radiation, cannot cause harmful levels of exposure to the unaided eye. However, the safety limit for ocular exposure can be exceeded, and injury can occur, if magnifying viewing instruments are used. Such instruments include binoculars and telescopes in the case of large-diameter collimated beams, or magnifying lenses and microscopes in the case of highly divergent beams. Hazardous exposure can also occur if the dimensions of the laser beam (its diameter or divergence) are reduced by the use of optical components in the beam path.

Class 2 - Laser products emitting low-level of visible radiation (that is, at wavelengths between 400 nm and 700 nm) which are safe for the skin but which are not inherently safe for the eyes, but for which eye

protection is normally afforded by natural aversion responses to bright light. Accidental eye exposure is therefore normally safe, although the natural aversion response can be overridden intentionally by deliberately staring into the beam and can be influenced by taking alcohol or drugs.

Class 2M - Laser products emitting levels of visible radiation that exceed the permitted accessible emission limits of Class 2 but which, because of the geometrical spread of the emitted radiation, protection of unaided eye is normally afforded by natural aversion responses to bright light However, the aversion response may not provide sufficient protection, and injury can occur, if magnifying viewing instruments are used. Such instruments include binoculars and telescopes in the case of large-diameter collimated beams, or magnifying lenses and microscopes in the case of highly divergent beams. Hazardous exposure can also occur if the dimensions of the laser beam (its diameter or divergence) are reduced by the use of optical components in the beam path.

Class 3R - Laser products having a level of accessible emission up to five times the limit for Class 1 (if invisible) or Class 2 (if visible). The maximum permissible exposure may be exceeded but the risk of injury is low.

Protection requirements for Class 3R: Prevent direct eye exposure to the beam or pointing the beam at other people.

Class 3B - Laser products having a level of accessible emission, which can be harmful to the eyes, whether magnifying viewing aids are used or not. Class 3B products can also be harmful to the skin at output levels approaching the upper limit of this class (500 mW). Protection requirements: prevent eye (and in some cases skin) exposure to the beam. Guard against unintentional beam reflections.

Class 4 - Laser products having a level of accessible emission, which can be harmful to both the eyes and the skin. Diffuse reflections of the laser radiation may also be hazardous. The laser emission can also be sufficient to ignite material, on which it impinges, and to generate harmful radiation or fume hazards by interaction with target materials.

Protection requirements for Class 4: Prevent eye and skin exposure to the beam, and to diffuse reflections (scattering) of the beam. Protect against interaction hazards such as fire and fume.