MODULOC SENSOR ENTERPRISES

MSE

MSE-LOS68 Laser Optical Distance Sensor

- ***Advanced totally safe Class I Laser for precise distance measurement.***
- ***Measuring range of 0.5 m to 300 m off natural surfaces and more than 3000 m off a high gain reflector.***
- ***Provides +/- 20 mm accuracy with 1 mm resolution.***
- ***RS232 Serial Interface and optional RS422 Serial Interface***
- ***Programmable 4-20 mA Analog Output***
- ***Two Programmable Digital Outputs***
- ***External Trigger Input***
- ***Extruded aluminum housing rated IP67 with Protective Lens Hood***

General Description

The MSE-LOS68 Laser Optical Distance Sensor operates via a pulsed time-of-flight (TOF) measurement technique. The MSE-LOS68 Laser Optical Distance Sensor operates over a substantial range off of a static or moving target. It measures up to 300 meters off of natural surfaces and up to 3000 meters off of a special high gain reflective surface. The MSE-LOS68 transmits ultra-short light pulses at the rate of 2000 measurements per second, measures the TOF to the reflector and back to derive the distance and transmits this data information via an interface to a computer, PLC or an analog instrument. The MSE-LOS68 can also be used to measure speed in the range of 0 m/s to 100 m/s (at 0.5 m to 700 m distance).

The standard MSE-LOS68 is supplied with a RS232 serial interface with a 1200 to 480,600 Baud Rate, a programmable 4 - 20 mA 16 BIT analog output, 2 programmable digital outputs and trigger input. Optional RS422 Serial Interfaces is available.

The standard MSE-LOS68 comes complete with integral heating, an LED status display and a red Laser pointer. The LED display is located on the back panel and is used to monitor of the current working status during normal operation. The red Laser point of the Pilot Laser is used to aid in alignment.

Measuring Accuracy is +/- 20 mm at 2 kHz measuring rate and at 100 Hz output rate and +/- 60 mm at 2 kHz measuring and output rate. Resolution is 1mm. Measure range depends on reflectivity and surface of the target.

The zero offset and the span of the 4 - 20 mA analog output are both user programmable. The distance offset is also user programmable, this allows the user to define a zero point independent of the analog output zero offset.

The MSE-LOS68 is provided in a dust and waterproof protected IP67 secondary enclosure. Standard operating temperature range is -40°C (-40°F) to 60°C (140°F). An optional Secondary Environmental Enclosure is available for additional protection for outdoor applications. An optional alignment telescope is available to aid in alignment of long distances.

Typical Applications

Product Material	Length, width, level and position of product.
Material Handling	Automated Storage/Retrieval Systems and positioning of mobile equipment.
Metals Industry	Measure/Position slab, billet, bloom or bar.
Crane Control	Positioning of cranes & crane trolleys.
Collision Avoidance	Distance alarm between vehicles with ot without reflective targets.

Housing Specifications

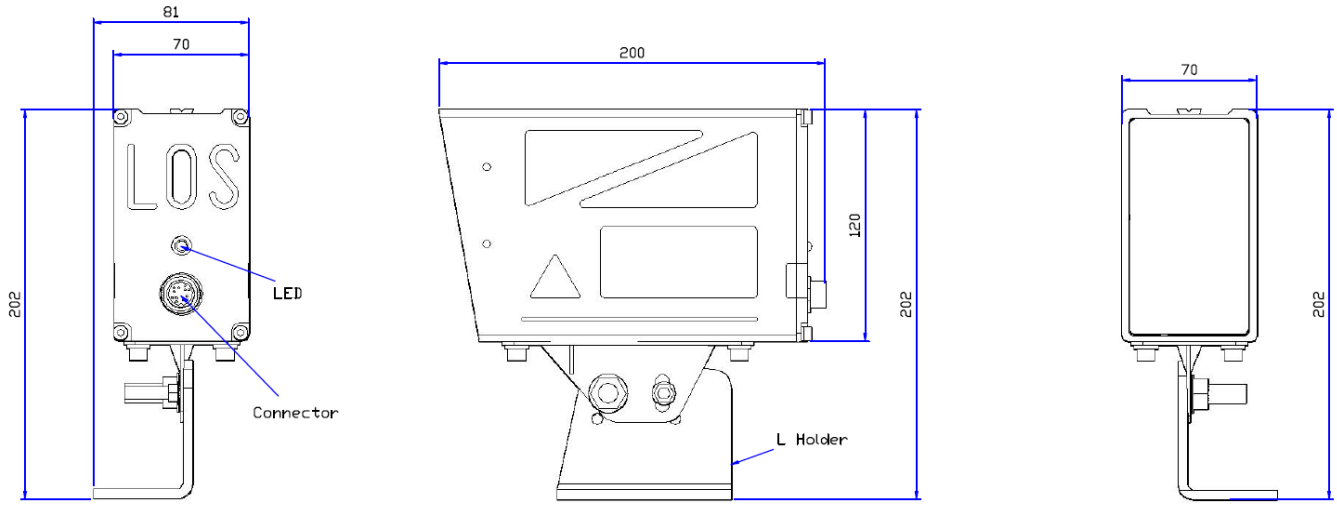
Housing: Aluminum, Oven baked blue paint
Housing Rating: IEC IP67, DIN 89011
Weight w/o Cable: 1.9 Kg (4.2lb)
Connector: IP67 Plug/Socket
Cable Length: 2.0 M (Optional 5m, 10m and 15m lengths are available)

Part Number Specifications

Example: MSE-LOS68-1
(RS232 Serial Interface)

Serial Interface	**-1**	RS232
	-2	RS422

MSE-LOS68 Dimensions



General Specifications

Measuring principle	Laser-pulse-time-of-flight measurement	Supply Voltage	10 - 30 VDC
Measuring range[1)]	Natural Surface: 0.5M (19.68IN) to 300M (980 FT)[2)] Special Reflector: 0.5M (19.68IN) to 3000M (9800 FT)	Power Consumption	< 5 W (operation without heating) 11.5 W (operation with heating at 24 VDC)
Accuracy (according to surface reflectivity)	± 20 mm (0.787in) 2 kHz measuring rate & 100 Hz output rate ± 60 mm (2.36in) 2 kHz measuring rate & output rate	Operating Temperature	-40°C (-40°F) to +60°C (140°F)
Resolution	1 mm	Storage Temperature	-40°C (-40°F) to +70°C (158°F)
Measuring Time	Standard version: 0.5 ms, Optional version: 0.1 ms	Relative Humidity	15% to 90%
Operating modes	Single measurement, continuous measurement, mean value, external triggering (selectable near-field suppression and window functions)	Shock resistance	10 g / 6 ms persistence shock DIN ISO 9022-3-31-01-1
Velocity Measuring range	0 m/s ... 100 m/s [3)]	Standard Serial Interface	**-1** RS232 (9600 - 460,800 baud)
Velocity Measuring time	0.1 sec to 0.5 sec[3)]	Optional Serial Interface	**-2** RS422 (9600 - 460,800 baud)
Laser Wavelength	905 nm (infrared)	Communication Protocol	Half Duplex via ASCII codes, 8N1
Laser Classification	Laser Class 1, DIN EN 60825-1:2003-10, Class I	Programming	via Hyper-terminal & Supplied Software
Laser Power	1 mW	Auto Distance Tracking	Can be programmed to start at power on
Laser Divergence	1.7 mrad	(2) Digital Outputs	high-side-switch, max. load 0.22 A, short-circuit-proof, adjustable windowing
Laser Spot Diameter	6mm(0.236in) at 10M (32.8ft), 60mm (2.36in) at 100M (328ft)	Analog Output	Programmable 4-20mA
Laser Pointer	Wavelength: 625nm, Visible Red	Trigger Input	trigger In/Out, edge and delay selectable, trigger level 3 - 30VDC,
Laser Pointer	Classification: Safety Class 2 (DIN EN 60825-1), Class II	Laser Pointer Modes	on, off, blinking

1) depending on target reflectivity, stray light influences and atmospheric conditions
2) natural, diffusely reflecting surfaces, do not use bad reflective materials (dark / black surfaces) as target under 10 m
3) distance range to target: 0.5 m to 700 m

This MSE sensor is manufactured by Moduloc System Engineering Ltd. Yantai Shandong, China P.R. which was established 2007.
The MSE-D301 is a direct replacement for the Model No. LT3001 previously manufactured by Moduloc Control Systems Ltd of the United Kingdom. Please contact MSE for additional questions on other replacement model numbers .

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