MODULOC SENSOR ENTERPRISES

MSE-LT205VHT Laser Distance Measurement Sensor

- Visible Red Class IIIR Laser for precise distance measurement
- Measurement range of 20m (65.6ft) off material as hot as 1200°C (2192°F)
- Provides ±1mm to ± 2mm accuracy
- RS232 or optional RS422/RS485 Serial Interface
- Programmable 4-20 mA Analog Output
- Programmable Zero and Distance Offset
- Programmable Digital Output & Offset
- Programmable Digital Output and External Trigger Input
- Robust Aluminum Housing rated IP66
- Horizontal Mounting Platform

General Description

The Model MSE-LT205VHT Laser Distance Measurement Sensor operates over a substantial range off static or passing product in difficult areas in harsh environments. It measures distances over a working range up to 20 meters (65.6ft) off of hot natural surfaces.

The Model MSE-LT205VHT especially suited for precise detection and measurement of hot product at temperatures up to 1200°C (2192°F). A model MSE-LT205 is available for target temperatures up to 600°C (1110°F) and a model MSE-LT205HT is available for target temperatures up to 900°C (1650°F). Straightforward alignment is easily accomplished via the visible red Class IIIR (3R) laser measuring beam.

Accuracy is ± 1 mm (0.039in) to ± 2 mm (0.079in) according to ambient temperature and surface reflectivity. Repeatability is ± 0.5 mm (0.0197in) and the user scalable resolution is 0.1mm.

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.

Provided with a user programmable digital switching output which is triggered by exceeding in the positive or negative direction a user programmable distance threshold. The hysteresis of the digital switching output is also programmable.

Supplied as standard with either a RS232 or an optional RS422/RS485 serial interface operating at 2,400 to 38,400 Baud Rate.

Standard operating temperature without cooling is 50°C (122°F). Optional water cooling is available for an operating temperature up to 80°C (176°F). An optional internal heater is available for low temperature applications down to -40°C (-40°F).

Additional options include an extended front protective tube to further help limiting radiant IR, a front protective tube with an air purge inlet, a heat reflective heat shield, a heat protective Kevlar cover, and a wall mounting bracket,

The MSE-LT205VHT Laser Distance Measurement Sensor provides a highly accurate measurement reading. It is ideal for length and width determination, and checking position of product in and around furnace areas.

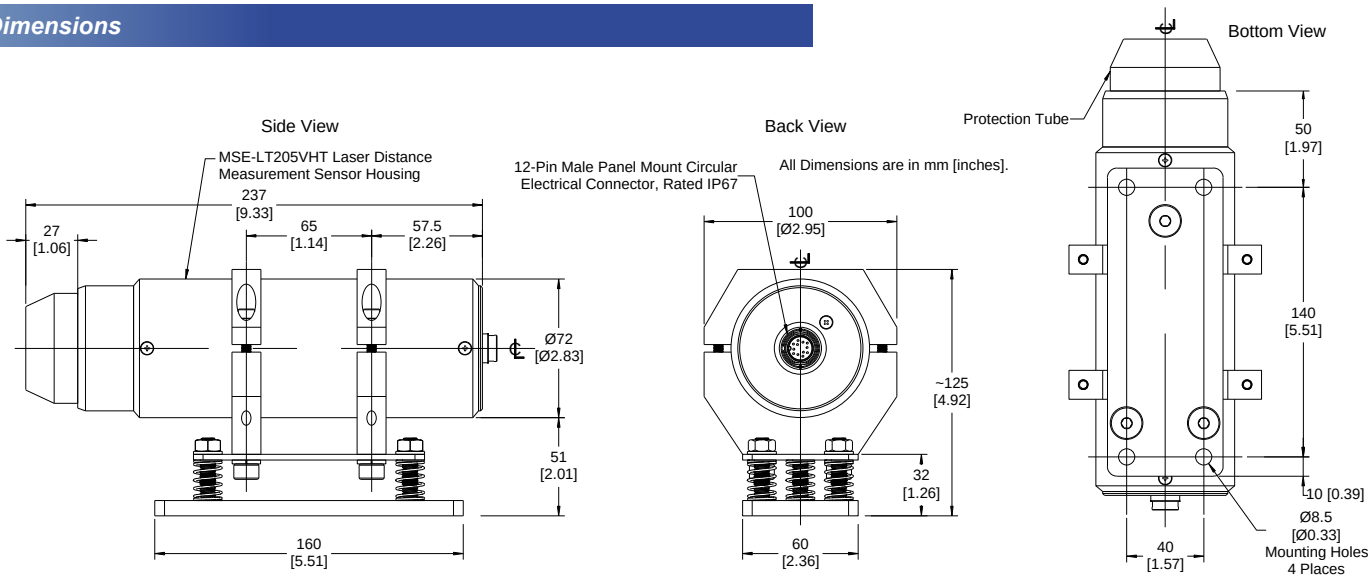
Other options and Optional Accessories are available including: FieldBus Connection Options: for Ethernet TCP/IP, Profibus, and ProfiNet. Optional accessories: Junction Boxes, AC to DC Power Supplies, External FieldBus Modules for ModBus, DeviceNet, & Ethernet/IP. An HMI/Controller that allows connection and communication with one (1) or two (2) MSE-LT205VHT Laser Distance Measurement Sensors for programming and displaying of distance measurement, length measurement, product presence. or product position, and with (2) lasers connected can be used to calculate and display the width, length or thickness of hot or cold product.

Please contact your local Moduloc sales representative for additional information.

Typical Applications

Product Material	Measure thickness, length, width, level and position of hot or cold product.
Metals Industry	Measure/Position of hot or cold slab, billet, bloom, rail or bar. Diameter measurement of hot or cold coils.

Dimensions



Housing Specifications

Housing: Aluminum with stainless steel hardware
Housing Rating: IEC IP66, DIN 89011
Weight w/o Cable: 5.1 Kg (11 LBS)
Electrical Connector: IP67 Plug/Socket
Cable Length: 2m (standard) - Optional 5m, 10m, 15m also available.
Optional water cooling (-W) is available. Please contact you MSE Sales Representative for more information.

Part Number Specifications

Example: MSE-LT205VHT-1-H
(RS232 Serial Interface with Heater)

Serial Interface	**-1**	RS232
	-2	RS422/RS485
Heating:	**-H**	Internal 24VDC Heater for operation down to -25°C (-13°F) No suffix is required when heater option is not included.

General Specifications

Operating range [1] (Type of surface)	Natural Surface: 0.2m (7.8in) to 20m (65.6ft)	Supply Voltage	24 VDC ±20%
		Power Consumption	<1.5 Watt Operating, 0.4 Watt in Standby
Accuracy (according to surface reflectivity)	± 1 mm (0.039in) at 15°C (59°F) to 30°C (86°F) operating temp.	Operating Temperature	-20°C (-4°F) to +50°C (122°F) no cooling[5]
	± 2 mm (0.079in) over full operating temperature range		-20°C (-4°F) to +70°C (158°F) water cooling[6]
Resolution	0.1 mm user (programmable & scalable)		-40°C (-40°F) with optional internal heater
Repeatability	±0.5 mm (0.0197in)	Storage Temperature	-40°C (-40°F) to +70°C (158°F)
Target Temp. Limit	1200°C (2192°F)	Trigger Input	Adjustable with delay & hi/lo adjustment
Measuring Time [2] (According to surface reflectivity)	Natural Surface: 240ms to 6s. (typically 240 ms) [3]	Serial Interface	RS232, 2400 - 38,400 baud, ASCII, 8N1
Laser Wavelength	650nm, Visible Red	Optional Interface	RS422 or RS485, 2400 - 38,400 baud, ASCII, 8N1
Laser Classification	Safety Class 3R (DIN EN 60825-1:2014), Class IIIR	Programming	via Hyper-terminal and Supplied Software
Laser Power	≤ 5 mW	Auto Distance Tracking	Can be programmed to start at power on
Laser Divergence	0.6 mrad	Digital Output	High value output with adjustable threshold, logic & hysteresis. 0.5 A limit
Laser Spot Diameter	6mm(0.236in) at 10m (32.8ft), 60mm (2.36in) at 100m (328ft)		
Laser Angle Tolerance	Better than ± 1° to the ground plane	Analog Output	Programmable 4-20mA, 16 BIT (0.15%) with 500 ohm Load Resistance. Programmable Zero & Span. Temperature drift of < 50ppm/°C.
MTTF	30,000 hrs, 24hr/7day, operation temp. +25°C (77°F)		
Scale (programmable)	Output can be m, cm, mm, yard, feet, inch		

1). Ranges shown are for DT measuring mode.
2). Measuring Time can also be preset in intervals of 240 msec to 6 seconds in DT measuring mode.
3). In DT measuring mode
4). With white surface, white target or with special reflective target.
5). -20°C (-4°F) to +60°C (140°F) with air cooling.
6). Up to +80°C (176°F) using industrial quality water chilled at 20°C minimum

This MSE sensor is manufactured by Moduloc System Engineering Ltd. Yantai Shandong, China P.R. which was established 2007.

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MSE

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We reserve the right to alter specifications without prior notice. Specifications without tolerances are typical values.

Your Local Sales Contact: