# MODULOC® Control Systems

## LT2000-XT LASER DISTANCE METER FOR EXPLOSION PROOF APPLICATIONS


- ***Visible Class II Laser providing precise distance measurement.***
- ***Operates off Natural Surfaces up to 25 Meters (82 feet), off a white target at 85 Meters (279 Feet) and off a special reflector target at 125 Meters (410 Feet).***
- ***Measuring rate as low as 100msec off of a white surface.***
- ***Provides +/- 3mm to +/- 5mm accuracy.***
- ***RS232 & RS422 Serial Interface***
- ***Programmable 4-20 mA Analog Output***
- ***External Trigger Input***
- ***Cast Aluminum Housing Rated IP66, NEMA 4X Plus Explosion Proof Class I, Groups B, C, D, Class II, Groups E, F, G, Class III, NEMA 7BCD, NEMA 9EFG and ATEX IIC***

### Typical Applications

| | |
|---|---|
| **Product Material** | Length, width, thickness, level and position of product. |
| **Material Handling** | Automated Storage/Retrieval Systems and positioning of mobile equipment. |
| **Crane Control** | Positioning of cranes & crane trolleys. |
| **Collision Avoidance** | Distance alarm between vehicles using white target. |

### General Description

The LT2000-XT Laser Distance Meter operates over a substantial range off static or passing product in difficult areas in harsh hazardous and outdoor environments. The LT2000-XT measures distances over a working range up to 25 meters off of natural surfaces , up to 85 meters off of white surfaces and up to 125 meters off of a special reflector. For operation with automated positioning control of material handling transport systems a white reflective target is used or the special reflector is used.

Especially suited for precise detection and measurement of cold/hot product at temperatures up to 600°C.

Straightforward alignment is easily accomplished via the visible red laser measuring beam.

Accuracy is +/- 3mm to +/- 5mm according to ambient temperature and surface reflectivity. Repeatability is +/- 0.5mm 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.

The LT2000-XT is 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.

The LT2000-XT is a robust Laser Distance Meter and is provided in a Sand Cast Copper Free Aluminum Explosion Proof Housing. The Housing meets Explosion Proof Certifications for Class I, Groups B, C, D; Class II, Groups E, F, G; Class III, NEMA 7BCD, NEMA 9EFG and ATEX IIC. The Housing can also be used in IP66 and NEMA 4X Water Tight Applications. The Housing has a corrosion Resistant, “Safety Blue” Polyester Powder Coating and utilizes Stainless Steel Hardware. Standard operating temperature is 50°C.

The LT2000-XT laser distance meter provides a highly accurate measurement reading. It is ideal for length, width, thickness, depth, height, position determination.

The LT2000-XT is supplied a standard with either a RS232 or RS422/RS485 serial interface with a 2400 to 38,400 Baud Rate & a programmable 4 - 20 mA 16 BIT analog output. An optional ProfiBus DP Gateway Interface Box is available. ProfiBus DP, DeviceNet, and Ethernet Interface Options will soon be available.

**MODULOC® Technology - The Total Laser Solution**

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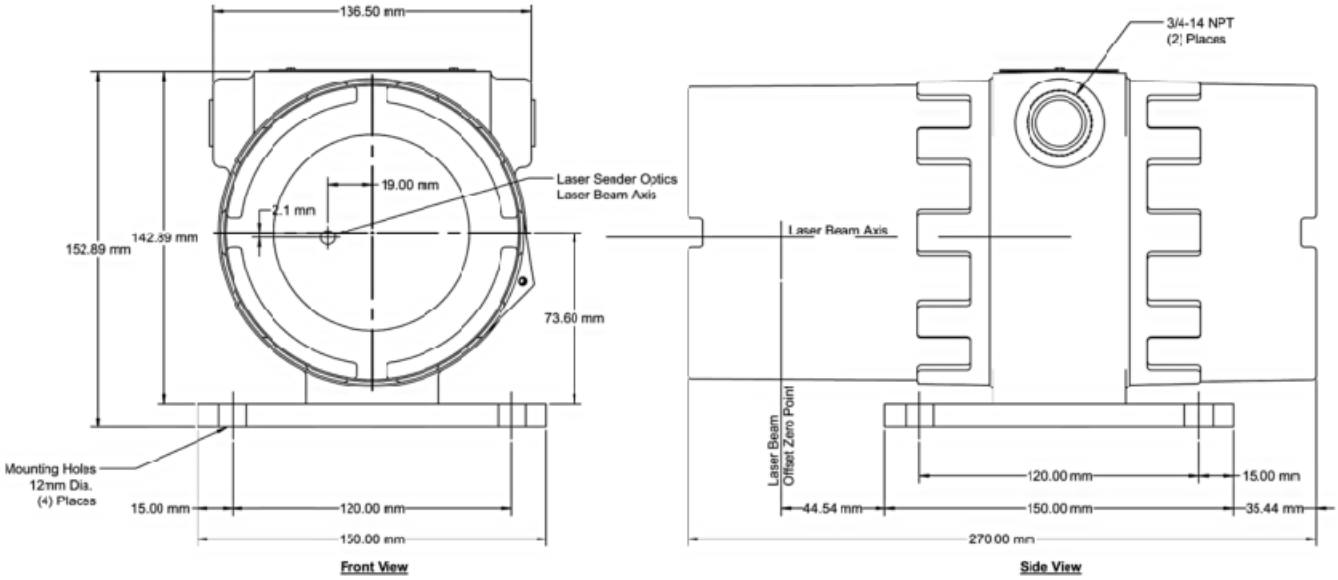
## Housing Specifications

**Housing:** Sand Cast Copper Free Aluminum, Corrosion Resistant Polyester Powder Coating, Stainless Steel Hardware
**Housing Rating:** Watertight: IP66, NEMA 4X
Explosion Proof: Class I, Groups B, C, D; Class II, Groups E, F,G; Class III, NEMA 7BCD, NEMA 9EFG and ATEX IIC.
**Weight:** 5.5KG (12LBS)
**Electrical Termination:** Internal Terminal Block.

## LT2000-XT Dimensions




## General Specifications

| | | | |
|---|---|---|---|
| Operating range[1] (Type of surface) | Natural Surface: 0.2M (7.8IN) to 25M (82 FT)<br>White Surface: 0.2M (7.8IN) to >85M (279Ft)<br>Special Reflector: 2M (6.6FT) to > 125M (410FT) | Supply Voltage | 10 - 30 VDC |
| | | Power Consumption | 1 Watt Operating, 0.4 Watt in Standby |
| Accuracy (according to temperature range) | ± 3 mm (0.118in) for 15°C (59°F) to 30°C (86°F) | Operating Temperature | -10°C (14°F) to +50°C (122°F) |
| | ± 5 mm (0.197in) over full operating temperature range | Storage Temperature | -20°C (-4°F) to +70°C (158°F) |
| Resolution | 0.1 mm user (programmable & scalable) | Product Temperature Limit | Standard 600°C (Hi-Temp model available) |
| Repeatability | ±0.5 mm (0.0197in) | Serial Interface | RS232 or RS422/RS485 (2400 - 38,400 baud) |
| Scale (programmable) | Output can be M, cm, mm, yard, feet, inch | Communication Protocol | Half Duplex via ASCII codes. |
| Measuring Time[2] (According to type of surface reflectivity) | Any Surface: 160 msec. to 6 sec. (typically 200 msec)[3] | Programming | via Hyper-terminal & Supplied Software |
| | White Surface: 100 msec (in DW Measuring Mode) | Optional Interface | ProfiBus gateway connection box.<br>Coming Soon New Options: ProfiBus DP Interface, DeviceNet Interface and Ethernet Interface. |
| Laser Wavelength | 659nm, Visible Red | | |
| Laser Classification | Safety Class 2 (DIN EN 60825-1), Class II | Auto Distance Tracking | Can be programmed to start at power on |
| Laser Power | 1 mW | Digital Output | High value output with adjustable threshold, logic & hysteresis. 0.5 A limit |
| Laser Divergence | 0.6 mrad | | |
| Laser Spot Diameter | 6mm(0.236in) at 10M (32.8ft), 60mm (2.36in) at 100M (328ft) | Analog Output | Programmable 4-20mA, 16 BIT (0.15%) with 500 ohm Load Resistance.<br>Programmable Zero & Span.<br>Temperature drift of < 50ppm/°C. |
| MTTF | 32,000 hrs | | |
| Trigger Input | Adjustable with delay & hi/lo adjustment (DF Measuring Mode) | | |

1). Ranges shown are for DT, DW & DM measuring mode. DS measuring mode has a range of 0.5M (197.7IN) to 7M (23FT)
2). Measuring Time can also be preset in intervals of 240 msec to 6 seconds in DT measuring mode and preset in intervals of 150M to 3.75 seconds in DS measuring mode.
3). In DT & DS measuring mode

***Coming Soon:** New Interface Options - ProfiBus DP Interface, DeviceNet Interface and Ethernet Interface.**

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

Your Local Sales Representative:

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