

MODULOC Control Systems



LT2020-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**
- **Measuring Rate as low as 20 msec off of a white surface or special reflector target**
- **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,**

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 LT2020-XT Laser Distance Meter operates over a substantial range off static or passing product in difficult areas in harsh hazardous and outdoor environments. The LT2020-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. The LT2020-XT can provide a measuring rate as low as 20 milliseconds when used with a white target or special reflector target.

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 LT2020-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 LT2020-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 LT2020-XT laser distance meter provides a highly accurate measurement reading. It is ideal for length, width, thickness, depth, height, position determination.

The LT2020-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

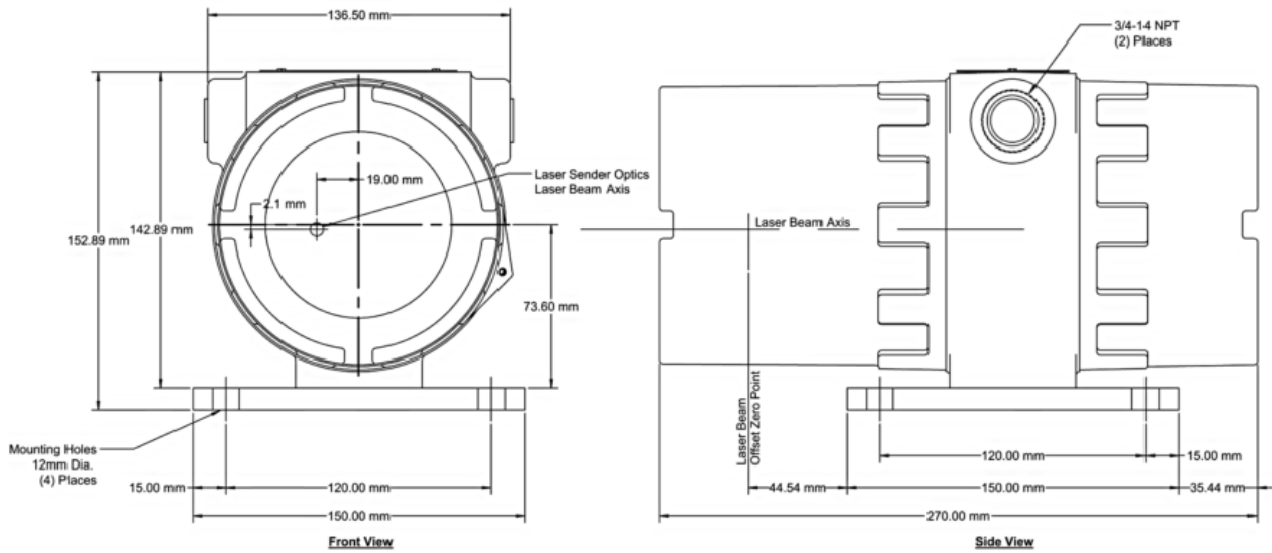
Housing Rating: Watertight: IP66, NEMA 4X

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.

LT2020-XT Dimensions



General Specifications

Operating range ¹⁾ (Type of surface)	Natural Surface: 0.2M (7.8IN) to 25M (82 FT)	Supply Voltage	10 - 30 VDC
	White Surface: 0.2M (7.8IN) to >85M (279Ft)	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. Coming Soon New Options: ProfiBus DP Interface, DeviceNet Interface and Ethernet Interface.
	White Surface: 20 msec (in DX Measuring Mode)		
Laser Wavelength	659nm, Visible Red	Auto Distance Tracking	Can be programmed to start at power on
Laser Classification	Safety Class 2 (DIN EN 60825-1), Class II	Digital Output	High value output with adjustable threshold, logic & hysteresis. 0.5 A limit
Laser Power	1 mW	Analog Output	Programmable 4-20mA, 16 BIT (0.15%) with 500 ohm Load Resistance. Programmable Zero & Span. Temperature drift of < 50ppm/°C.
Laser Divergence	0.6 mrad		
Laser Spot Diameter	6mm(0.236in) at 10M (32.8ft), 60mm(2.36in) at 100M (328ft)		
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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Your Local Sales Representative:



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

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