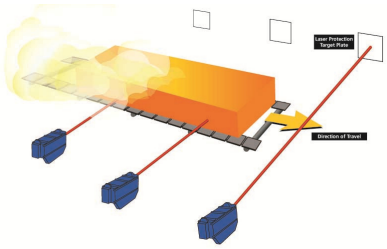
MODULOC® Control Systems

LT2000-ST & LT2000-HT ROBUST LASER DISTANCE METERS

- ***Visible Class II Laser providing precise distance measurement***
- ***Operates off Natural Surfaces at upto 30 Meters. Off a white target at 100 Meters and off a reflector at 150 Meters***
- ***ST Model measures off product upto 900ºC***
- ***HT Model measure off hot product upto 1200ºC***
- ***Provides +/- 2mm to +/- 5mm accuracy***
- ***Robust IP66 cast aluminum housing with unique combined air purge & cooling facility with Optional water cooling available***
- ***Low in cost yet long range***
- ***RS232 or RS422 Serial Interface***
- ***Programmable 4-20 mA Analog Output***
- ***Programmable Zero and Distance Offset***
- ***Programmable Digital Output and External Trigger Input***

Typical Applications

Product Material	Length, width, level and position of product.
Material Handling	Automated Storage/Retrieval Systems & positioning of mobile equipment.
Metals Industry	Measure/Position slab, billet, bloom or bar.
Crane Control	Positioning of cranes & crane trolleys.



General Description

These Laser Distance Meters operate over a substantial range off static or passing product in difficult areas and harsh environments over a range upto 30 meters off natural surfaces, upto 100 meters off white surfaces and upto 150 meters off reflector. For automated positioning control of material handling and transport systems these are the ideal low cost solution.

The LT2000-ST is especially suited for precise detection and measurement of cold product at 900℃ upto 20M and well suited for measuring product width or length. The LT2000-HT can measure off hot product at upto 1200℃ where within 5M.

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

Accuracy of +/- 2mm to +/- 5mm according to ambient temperature and surface reflectivity. Repeatability is +/- 0.5mm and the user scalable resolution is 0.1mm.

The zero and distance offset as well as the span of the 4 - 20 mA analog output are both user programmable. This user can 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 of a programmable distance threshold. The hysteresis of the digital switching output is also programmable and an external trigger is provided.

This Robust Laser Distance Meter comes as standard with built-in air coolant chamber venting as air purge. Standard operating temperature without air cooling is 50℃ and with air cooling 60℃. Optional water cooling with separate air purge is available for an operating temperature up to 70℃.

These Laser Distance Meters provide a highly accurate measurement reading and are ideal for length and width determination as well as controlling position of product in and around furnace areas.

Supplied as standard with either RS232 or RS422 serial interface with a 2400 to 38,400 Baud Rate & a programmable 4 - 20 mA 16 BIT analog output. ProfiBus DP Option is available.

A custom fabricated Heat Reflective Cover is available made from aluminium Kevlar. Upto 90% of external heat sources are reflected away. Provides heat reflective qualities in high ambient conditions and alongside external radiating heat sources.

MODULOC® Technology - The Total Laser Solution

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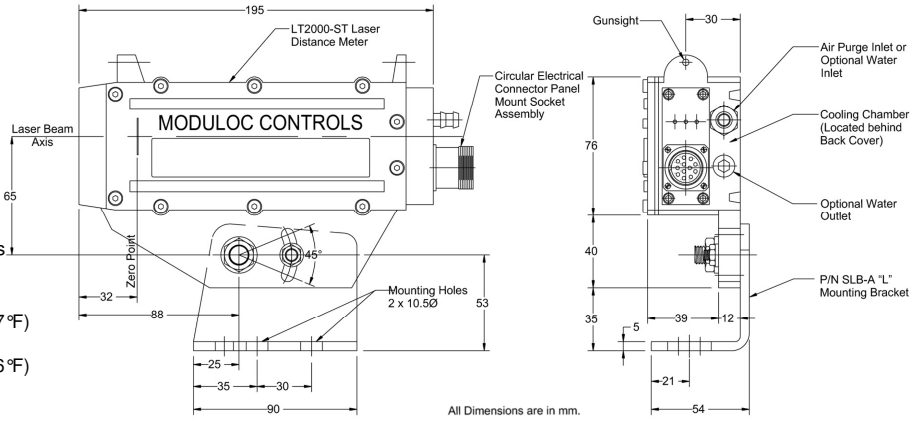
Housing Specifications

Housing: Aluminum AL6, Oven baked blue paint
Housing Rating: IEC IP66, DIN 89011
Weight w/o Cable: 1.9 Kg (4.2lb)
Connector: IP65 Plug/Socket
Cable Length: 2.0 M (Optional 5, 10 & 15M Available)
Cooling: Standard: -A Air Cooled & Air Purged
Optional: -D Water Cooled & Air Purged

Air & Optional Water Specifications

Air Pressure: 1 cu ft./min at 5 PSI for normal conditions
5 cu ft./min at 15 PSI for severe conditions
Water Pressure: 5 to 10 PSI
Water Volume: Regulate between 0.2 - 0.3 liters/min.
Water Temp.: For Ambient Temperature up to 70°C (167°F) use ambient water below 20°C (68°F)
For Ambient Temperature up to 80°C (176°F) use water chilled to 5°C

LT2000-ST / HT Dimensions



General Specifications

Operating range[1] (Type of surface)	Natural Surface: 0.2M (7.8IN) to 30M (98FT) White Surface: 0.2M (7.8IN) to >100M (328FT) Special Reflector: 2M (6.6FT) to > 150M (492FT)	Supply Voltage	10 - 30 VDC
		Power Consumption	1 Watt Operating, 0.4 Watt in Standby
Accuracy (according to surface reflectivity)	± 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) no cooling
	± 5 mm (0.197in) over full operating temperature range		-10°C (14°F) to +60°C (140°F) w/air cooling
Resolution	0.1 mm user (programmable & scalable)		+2°C to 65°C with (20°C/68°F) water cooling
Repeatability	±0.5 mm (0.0197in)	Storage Temperature	-20°C (-4°F) to +70°C (158°F)
Scale (programmable)	Output can be M, cm, mm, yard, feet, inch	Product Temp. Limit	ST - 900°C HT - 1200ºC
Measuring Time[2] (According to type of surface reflectivity)	Any Surface: 160 msec. to 6 sec. (typically 200 msec)[3]	Serial Interface	RS232 or RS422/RS485 (2400 - 38,400 baud)
	White Surface: 100 msec (in DW Measuring Mode)	Communication Protocol	Half Duplex via ASCII codes.
Laser Wavelength	659nm, Visible Red	Programming	via Hyper-terminal and Supplied Software
Laser Classification	DIN EN 60825-1, Class 2	Optional Interface	ProfiBus DP
Laser Power	1 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)		
MTTF	32,000 hrs	Analog Output	Programmable 4-20mA, 16 BIT (0.15%) with 500 ohm Load Resistance. Programmable Zero & Span. Temperature drift of < 50ppm/°C.
Power Indication:	Red LED		
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.

Optional BR22 Laser CPU

This CPU provides a localized LCD display and keypad for programming of the laser operational via a user-friendly menu. The CPU operates from 90-240 VAC supply and provides the required DC power to the laser.

The CPU communicates to the laser via an RS422 Serial Interface to accommodate long cable runs. When powered, it automatically starts and programs the laser to configured operational parameters. The CPU provides a 4-20mA analog output of the measurement as well as both RS232 and RS422 Serial Interfaces and has a relay output with adjustable threshold for product presence. All parameters using the keypad are displayed on the LCD display.

The CPU is housed in an IP65 rated painted aluminium enclosure for local mounting and available in various configurations for operation of 1 or 2 lasers for determining product length thickness ,width or positioning control.

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Control Systems

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

Your Local Sales Representative:

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