



LT2000-HT-EN LASER DISTANCE METER with ETHERNET INTERFACE



- **Visible Class II Laser for precise measurement.**
- **Measurement range 20 Meters off red hot glowing material to 1260°C (2300°F).**
- **Provides < +/- 6mm accuracy .**
- **Low in cost yet very accurate.**
- **Ethernet Interface**
- **Industrial RJ45 Receptacle**
- **Programmable 4-20 mA Analog Output**
- **Programmable Digital Output & Offset**
- **External Trigger Input**
- **Robust compact IP66 aluminum housing with unique combined air purge & cooling facility.**

Typical Applications

Product Material Length, width, level and position of hot product.

Metals Industry Measure/Position slab, billet, bloom or bar, automatic cutoff.

General Description

The LT2000-HT-EN Laser Distance Meter is designed to operate off static or passing product with product temperatures up to 1260°C (2300°F) in harsh environments. Measures off red hot glowing product at distances of up to 20M (65.6 FT).

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

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.

The LT2000-HT-EN Laser Distance Meter provides a highly accurate measurement reading. It is ideal for width, height or length determination and checking position of the product inside the furnace as well as for molten metal level.

Supplied as standard with a switch selectable RS232 & RS422 serial interface with a 2400 to 38,400 Baud Rate & a programmable 4 - 20 mA 16 BIT analog output. ProfiBus DP and The Ethernet Interface option are now available.

An optional Heat Reflective Cover is now available. The custom fabricated protective cover is made from Eko-Therm™ aluminized Kevlar with high temperature construction and high temperature Velcro® closures. Up to 90% of external heat sources are reflected away from the Eko-Therm™ mirror like surface. Provides a unique combination of thermal insulation and heat reflective qualities. Helps maintain cooling process line temperatures in high ambient conditions or alongside external radiating heat sources.

The LT2000-HT-EN is supplied as standard with an Ethernet Interface and with Industrial RJ45 Receptacle. The Ethernet Interface is configured as an Ethernet Web Server.

MODULOC Technology - The Total Laser Solution

MODULOC Control Systems Ltd.

Wheathamstead, Hertfordshire, AL4 8SB United Kingdom
Phone: +44 (0)845 8736501 FAX: +44 (0)1582 831980
E-Mail: sales@moduloc-intl.com Website: www.moduloc-intl.com

MODULOC Control Systems, Inc.

500 Garden City Drive. - Suite 2B, Monroeville, PA 15146 USA
Phone: 412-824-1260 FAX: 412-824-8890
E-Mail: sales@moduloc-usa.com Website: www.moduloc-usa.com

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: -P IP66 Plug/Socket
Cable Length: 2.0 M (Optional 5, 10 & 15M are available)
Cooling: Standard: -A Air Cooled & Air Purged
Optional: -D Water Cooled & Air Purged

Air & Optional Water Specifications

Air Pressure: 1 - 2 cu ft./min. at 5 PSI for normal conditions, non-instrument dry air and 10 - 15 PSI for severe conditions
Water Pressure: 1 - 2 Bar
Water Volume: Regulate between 0.5 - 1 liter/min.
Water Temp.: For Ambient Temperature up to +80°C (176°F) use industrial quality water at 25°C (77°F)
 For Ambient Temperature up to +120°C (250°F) use water chilled to 5°C (41°F)

General Specifications

Operating range	Up to 20 Meters (65.6 FT) off of Red hot glowing material $\leq 1260^{\circ}\text{C}$ (2300°F)	Supply Voltage	-86 10 - 30 VDC
Typical Accuracy	± 6 mm (0.236")	Power Consumption	1 Watt Operating, 0.4 Watt in Standby
Resolution	0.1 mm user scalable	Operating Temperature	-20°C (-4°F) to +50°C (122°F) without air or water cooling -20°C (-4°F) to +60°C (140°F) with air cooling -20°C (-4°F) to +90°C (194°F) inline vortex air cooling +2°C (36°F) to +120°C (250°F) with water cooling
Repeatability	± 2.0 mm (0.079")	Storage Temperature	-20°C (-4°F) to +70°C (158°F)
Measuring Time	160 msec. to 6 sec. (dependent on surface)	Product Temp. Limit	High Temp $\leq 1200^{\circ}\text{C}$ (2192°F)
Update Rate	5 Hz	Serial Interface (selectable)	RS232 or RS422 (2400 - 38,400 baud)
Laser Wavelength	Visible Red 650nm	Communication Protocol	Half Duplex via ASCII codes.
Laser Classification	Safety Class 2 (BS EN 60825-1), Class II	Programming	via Hyper-terminal and Supplied Software
Laser Power	1 mW	Optional Interface*	Profibus gateway connection box, half-duplex
Laser Divergence	0.6 mrad	Auto Tracking	Can be programmed to start at power on
Laser Spot Diameter	6mm (0.236") at 10M (32.8 FT) & 12mm (0.472") at 20M (65.6 FT)	Bus Interface	Ethernet Web Server, RJ45, CAT5E
MTTF	32,000 hrs	Digital Output	High value output with adjustable threshold, logic & hysteresis. 0.5 A limit
Power Indication:	Red LED	Analog Output	Programmable 4-20mA, 16 BIT (0.15%) with 500 ohm distance limit.
Trigger Input (optional)	Adjustable with delay & hi/lo adjustment		
Temperature drift	< 50ppm/°C		

***Coming Soon: New Interface Options - Profibus DP Interface & DeviceNet Interface. Ethernet Interface is now available.**

Optional BR22 Laser Interface

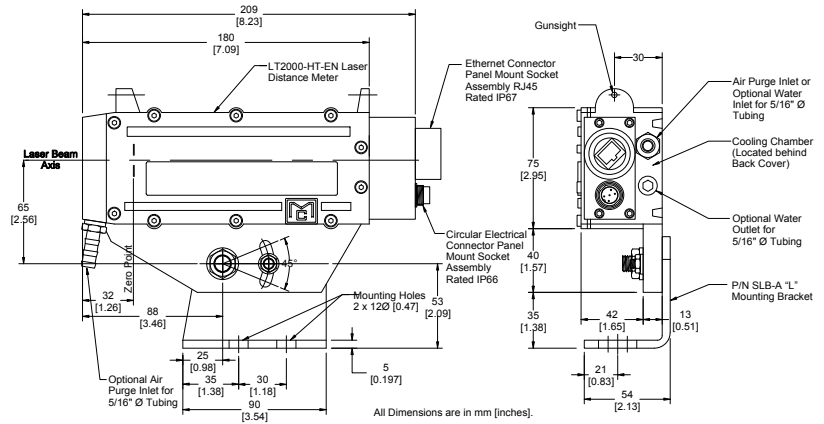
The BR22 Laser Interface provides a localized LCD display of distance measurement and programming of the laser operational parameters via keypad operation and a user-friendly menu. The BR22 operates from 90 - 240 VAC supply and provides the required DC power to the laser.

The BR22 communicates to the laser via an RS422 Serial Interface to accommodate long cable runs. When powered on the BR22 automatically starts and programs the laser to configured operational parameters. The BR22 provides a 4-20 mA analog output of the laser distance measurement as well as RS232 & RS422 serial interfaces. The BR22 has a relay output with adjustable threshold for product presence. Parameters for the BR22's analog output, host serial interface and relay output as well as for the laser are configured using the keypad and are displayed via a menu on the BR22 LCD display.

The BR22 is housed in an IP65 rated painted aluminum enclosure and can be placed directly on the mill floor. The operating temperature range is -10°C to +50°C.

The BR22 is available in several configurations for operation of 1 or 2 lasers, for product length, thickness or width measurement, and for positioning control. The BR22 is also available with a supply voltage of 24VDC $\pm 20\%$.

LT2000-HT-EN Dimensions



MODULOC Technology - The Total Laser Solution

MODULOC
Control Systems

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

Your Local Sales Representative:



Bulletin MC-LT2000-HT-09-08
August 2009