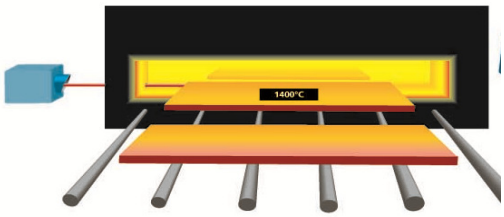
MODULOC®
Control Systems

HIGH TEMPERATURE LT2000-VHT LASER DISTANCE METER
Measures off Red Hot Product at 1,450ºC in the Furnace

- ***Visible Class 3R Laser for precise measurement off red hot material upto 1,450ºC inside the furnace***
- ***Incorporates filtering out of non valid readings over configurable ranges***
- ***Measurement range of upto 50 mtrs and typically ±3mm accuracy***
- ***Both RS232 and RS422 Serial Interface***
- ***Programmable 4-20mA Analog Output***
- ***Programmable zero and Distance offset***
- ***Programmable Digital Output and External Trigger Input***
- ***Robust IP66 aluminium housing with combined air purge & water cooling facility***

Typical Applications

Metals Industry Measure slab, billet, bloom or bar, automatic cutoff.
Product Material Length, width and position of hot product.



General Description

This powerful LT2000-VHT Laser Distance Meter is designed to operate off static or passing hot product with product temperatures up to 1,450°C even where the product inside the furnace. Measures off red hot glowing product at distances of up to 50M.

The LT2000-VHT uniquely incorporates a fast processor that enables filtering out of non valid readings over a 100ms period and the ability to specify out of range tolerance of between 50mms and 50M.

Straightforward alignment is easily accomplished via the visible red laser measuring beam. Accuracy of ±2mm to ±5mm according to averaging filter and velocity of product. This Laser incorporates a fast intelligent processor with special filtering that removes non-valid values and enables restriction of non-valid distance values.

The zero offset and the span of the 4 - 20 mA analogue output are both user programmable. The distance offset is also user programmable to allow the user to define a zero point independent of the analogue output zero offset. Provided with a user programmable digital switching output triggered by exceeding in the positive or negative direction a specified distance threshold. The hysterisis of the digital switching output is also programmable.

The LT2000-VHT Laser Distance Meter provides a highly accurate measurement reading. It is ideal for width and length determination as well as determining the position of the product inside the furnace. Incorporates water cooled chamber and direct air purge to prevent lens contamination.

For severe high radiant and ambient heat water cooled enclosure is available as well as an optional heat protective Kevlar insulated cover is available. Up to 90% of external heat sources are reflected away. Provides a unique combination of thermal insulation and heat reflective qualities in high ambient conditions or alongside external radiating heat sources.

Supplied as standard with RS232 or RS422 serial interface with a 2400 to 38,400 baud rate & a programmable 4-20 mA 16 BIT analogue output.

MODULOC® Technology - The Total Laser Solution

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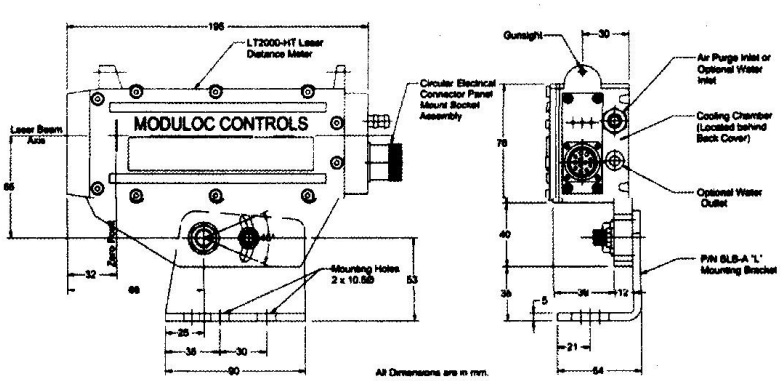
Housing Specifications

Housing: Aluminum AL6, Oven baked blue paint
Housing Rating: IEC IP66, DIN, 89011
Weight w/o Cable: 1.9 Kg (4.2lb)
Connector: -P IP65 Plug/Socket
Cable Length: 2.0 M (Optional 5, 10 & 15M are available)

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 litre/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 chilled to 5°C (41°F)

LT2000-VHT Dimensions



General Specifications

Operating range	0.2 to 50 Meters (65.6 FT) off of Red hot glowing material ≤ 1,350°C	Supply Voltage	10 - 30 VDC
Typical Accuracy	± 3 mm (0.236") Depending on set scale factor	Power Consumption	1.5 Watt Operating, 0.4 Watt in Standby
		Operating Temperature	-10°C (14°F) to +50°C (122°F) w/o air cooling
Repeatability	±2.0 mm (0.160")		-10°C (14°F) to +60°C (140°F) w/ air cooling
Measuring Time (Rate dependant on selected measuring mode and surface nature)	Std Device: 160 msec. to 6 sec. Optional Fast Device: 10ms—100ms 100ms in DW mode Has special filters removing error messages and non-valid values with restricted measurement window.		+2°C to 65°C with (20°C/68°F) water cooling
Update Rate	10 Hz (100ms)	Storage Temperature	-20°C (-4°F) to +70°C (158°F)
Laser Wavelength	Visible Red 650nm	Product Temp. Limit	High Temp ≤ 1400°C (2550°F)
Laser Classification	Safety Class 3R (IEC825-1), Class II	Serial Interface (selectable)	RS232 or RS422 (2400 - 38,400 baud)
Laser Power	Class 3R 3.5mW	Communication Protocol	Half Duplex via ASCII codes.
Laser Divergence	0.6 mrad	Programming	via Hyper-terminal or Supplied Software
Laser Spot Diameter	6mm (0.236") at 10M (32.8 FT) & 12mm (0.472") at 20M (65.6 FT)		
MTTF	32,000 hrs	Auto Tracking	Can be programmed to start at power on
Power Indication:	Red LED	Digital Output	High value output with adjustable threshold, logic & hysteresis. 0.5 A limit 6V
Trigger Input (optional)	External in DF mode. 3 to 24 V pulse length >1ms. Delay 0-9999ms	Analog Output	Programmable 4-20mA, 16 BIT (0.15%) with 500 ohm distance limit.
Temperature drift	< 50ppm/°C		

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 4-20 mA analog output of the measurement as well as both RS232 & 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 aluminum 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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