# MODULOC®
## Control Systems

## NEW GENERATION MD3500VHT LASER DISTANCE METER—1300° C +



- *Class* II *Laser providing precise measurement*
- *Multiple Selectable RS232 , RS422, RS485 Serial Interfaces*
- *Operates off Natural Surfaces up to 100M and off Oralite 5200 Reflector Panels at up to 500M*
- *Provides +/- 1mm accuracy and 0.1mm resolution*
- *Low in cost yet long range*
- *Programmable 4-20 mA Analogue Output*
- *"Three" programmable Digital Outputs with Offset*
- *External Trigger Input and Output*

- *Available with Ex rated enclosure Typical Applications*

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|---|---|
| **Product Measurement** | Length, width, level and position of product. |
| **Material Handling** | Automated Storage Systems and mobile equipment. |
| **Metals Industry** | Measure/Position slab, billet, bloom or bar. |
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| **Crane Control** | Positioning of cranes & crane trolleys. |
| **Collision Avoidance** | Distance alarm between crane trolleys off reflectors |

General Description

The New Generation MD3500-VHT Laser Distance Meter operates over a substantial range off static or passing product as well as providing crane positioning and control in harsh environments. It has a substantial working range up to 100M off natural surfaces and up to 500M off Reflector foil panels.

As the Laser Distance Meter has a fast measuring rate of up to100 Hz and provides a highly accurate measurement reading it is ideal for length and width determination, checking position of product in the Plant as well as for Crane Control and positioning.   The Sensor may be parameterized via the display, Hyper-Terminal or similar terminal programming and 7-bit ASCII protocol.

Especially suited for precise detection and measurement of product at temperatures over 1300°C.  For higher product temperature other Models are available.

Straightforward alignment is easily accomplished via the visible laser measuring beam.  Accuracy provided is +/- 1mm with a repeatability of +/- 0.1mm and the user scalable resolution is 0.1mm. The zero offset and the span of the 4 - 20 mA analogue output are user programmable. The distance offset is also user programmable and allows the user to define a zero point independent of the analogue output zero offset.

Provided with three programmable digital switching outputs to provide independent alarms triggered by exceeding in the positive or negative direction a user programmable distance threshold. The hysteresis of these is programmable.  In addition a trigger function is provided by se- lection that can be used as an input or output.

Supplied as standard with multiple RS232, RS422 and RS485 Serial Interfaces as well as 4 - 20 mA 12 Bit analogue output. Other Models with ProfiBus DP or SSI connection being introduced shortly.
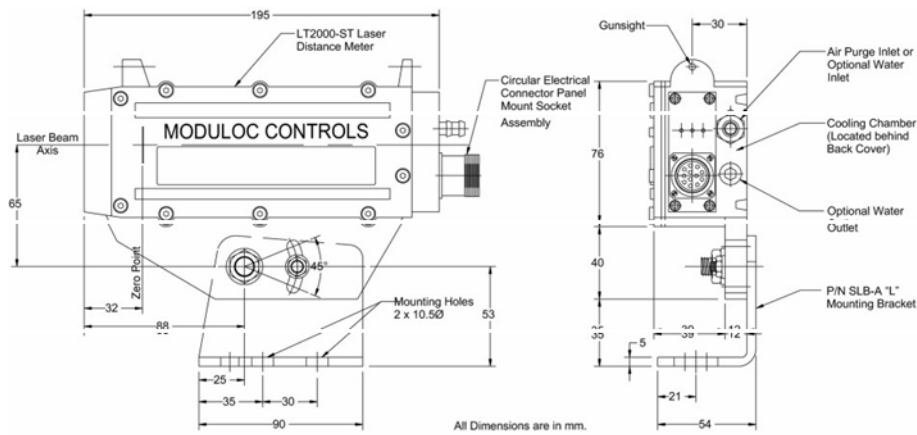
## A Rotalec Company

Diagram labels:
- 195
- LT2000-ST Laser Distance Meter
- MODULOC CONTROLS
- Laser Beam Axis
- 65
- Zero Point
- 32
- RR
- 25
- 35
- 30
- 90
- Mounting Holes 2 x 10.5Ø
- 53
- All Dimensions are in mm.
- Gunsight
- 30
- Air Purge Inlet or Optional Water Inlet
- Circular Electrical Connector Panel Mount Socket Assembly
- Cooling Chamber (Located behind Back Cover)
- 76
- Optional Water Outlet
- 40
- P/N SLB-A "L" Mounting Bracket
- 35
- 5
- 39
- 12
- 21
- 54

## General Specifications

| | | | |
|---|---|---|---|
| Operating range Off Natural Surfaces 100hz/variable measuring | White matt surface: From 150mm to 30M Grey matt surface: From 150mm to 10M Black matt surface: From 150mm to 10M | Supply Voltage | 10 - 30 VDC 10W (with Heater 42W) |
| Operating Range Off Oralite Reflector Foils | From 500 mm to 100M off 3M 3279 Reflector foil From 50M to 500M off Oralite 5200 Reflector foil | Min Operating temperature With Heater (Option) | 10°C (14ºF)... + 60ºC (140ºF) 40ºC (-40ºF) |
| | | Operating Temperature | -10°C (14°F) to +60°C (140°F) no cooling |
| Resolution | ± 0.1 mm user (programmable & scalable) | Humidity | 15% - 90% non-condensing |
| Measuring Frequencies | Selectable 20, 50 and 100Hz | Storage Temperature | -40°C (-40°F) to +70°C (158°F) |
| Scale (programmable) | Output can be M, cm, mm, yard, feet, inch | Product Temp. Limit | Standard 1300°C+ |
| Accuracy according to surface reflectivity & averaging value | ± 1 mm at 20 Hz / < ± 2.5 mm at other frequencies (1α) | Standard Serial Interfaces | RS232, RS422 & RS485 Interfaces by selection |
| Analog Output | Programmable 4-20mA, 12 BIT Load Resistance 100 ohm <R < 500 ohm/0.5W Programmable Zero & Span. Output Error at 20mA + 15% at 25°C. | Optional Interfaces According to Model (No Heater available) | Not available at this time |
| Minimum measuring period | 10 m.s. | Remote Programming | Via Hyper-terminal or other terminal programming |
| Maximum Target Velocity | 20 m.s. | Communication Protocol | 7 Bit ASCII codes Synchronous & Data Bit, no parity & stop hit |
| Laser Wavelength | 635 nm, Visible Red | Auto Distance Tracking | Can be programmed to start at power on |
| Laser Classification | Safety Class 2 (DIN EN 60825-1): 2007 | Digital Outputs | 3 X High value output with adjustable threshold, logic & hysteresis. 0.2 A limit |
| Min. Measuring Time | 10 ms Varies according to surface reflectivity | | |
| Laser Divergence | 0.13 W mrad x 0.17H mrad | Housing Specifications: | Housing: Aluminium: AL6 Oven baked blue paint Housing Rating: IEC IP67 DIN 89011 Weight W/o cable: 1.9 Kg (4.2lb) Connectors: IP65 Plug/Sockets Cable Length: .20 M (optional 5, 10 & 15 availa- ble at additional cost |
| Laser Spot (Elliptical) | Divergence 4 x 5mm @10M, 25 x 35mm @100M, 130x170mm @ 500M | | |
| MTTF | 32,000 hrs | | |
| Power Indication: | Green LED | | Fastening: M6 screws (base 3 off, side 2 off) |
| Triggers | Input and Output Triggers | | |

## MODULOC® Technology - The Total Sensor Solution

# MODULOC ®
## Control Systems

Your Local Sales Representative: