MODULOC Control Systems

MDHD20HT LASER DISTANCE METER

- ***Advanced totally safe Class I Laser for precise distance measurement.***
- ***Powerful Micro-Processor with self diagnostics.***
- ***Time-of-Flight Measurement Technique.***
- ***Standard Interfaces include RS232/RS422 Serial, 4-20mA Analog and two digital switched outputs.***
- ***Selectable visible Class II pulsed laser pointer for aiding alignment.***
- ***Measurement Range of up to 20M off of red hot glowing material to 1400°C (2552°F)***

Features

- Non-contact distance measurement
- High precision and resolution
- Fast measurement rate
- Robust compact industrial design
- Single, multiple or mean average measurement
- Dual digital outputs for zone protection
- Standard Interface: RS232/RS422 and Analog
- Intelligent LDM incorporating continuous self test
- Optional Network Interface: PROFIBUS DP
- Secondary Environmental Enclosures are available for additional protection for indoor, outdoor and elevated temperature applications including Air Cooled/Purged, Peltier Cooling and Water Cooled with Air Purging.

ELDP Product Family

The MDHD Product Family consist of electro-optical range finders that feature compact design and application oriented measuring technology.

The range to natural surfaces is 155 M. When using reflectors or glass prisms the range increase up to 1200M.

Other sensors that are part of the MDHD Product Family:

- ELDP10 for measurements to a reflector panel at distances over 80M or to natural surfaces up to 20M.
- MDHD100 for measurements to a reflector panel at distances up to 800M or to natural surfaces up to 155M.

Typical Applications

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

Metals Industry Measure/Position slab, billet, bloom or bar, automatic cutoff, coil diameter and level in a crucible, ladle or vessel. Laser measurement of length, width, level and position of product. Tracking of Hot Product inside or around a furnace.

ELDP Description

The MDHD20HT Laser Distance Meter operates via a unique pulsed time-of-flight (TOF) measurement technique and measures distances off of a red hot glowing natural surfaces up to 1400°C at distances of up to 20 meters. The MDHD20HT transmits ultra-short light pulses at the rate of 1000 measurements per second, measures the TOF to the reflector and back to derive the distance and transmits this data information via an interface to a computer, PLC or an analog instrument.

The MDHD20HT is equipped with a powerful m-Processor to handle a variety of measurement tasks and self diagnostics. By means of parameterized mean value calculation, high dynamic positioning tasks may be accomplished.

Two programmable threshold bands can be defined. Measurements below these thresholds are indicated via digital outputs & LEDS. These thresholds & outputs are programmable via a RS232 or RS422 connection to a computer or a PLC. The MDHD20HT is equipped with a switch selectable opto-coupled RS 232, RS422 & programmable analog interface as standard. Only one digital output is available if the analog interface is selected. An optional PROFIBUS DB Interface is also available.

MODULOC Technology - The Total Laser Solution

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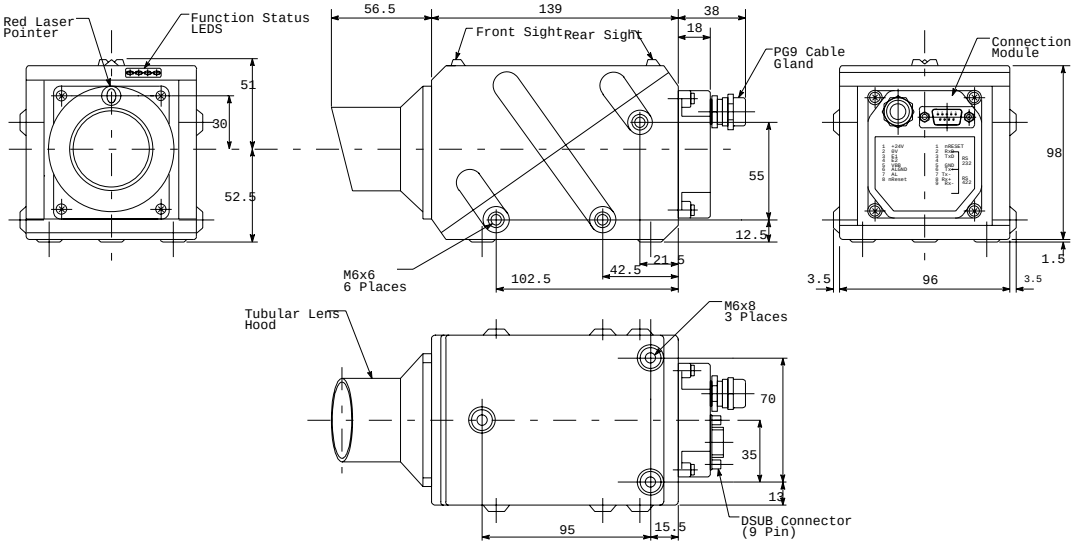
MDHD20HT DIMENSIONS



Pin Out Connections

Screw Terminal Block:

1. +24V:	Supply (DC+)
2. GND:	Supply ground
3. E1	Switching output 1
4. E2	Switching output 2
5. VBB	E1, E2 Supply
6. ALGND	Analog ground
7. AL	Analog Output
8. nRESET	external RESET

D-SUB 9 Connector:

1. nRESET	external RESET
2. RxD	RS232 Input
3. TxD	RS232 Output
4. NC	Not used
5. GND	RS232 ground
6. Tx+	RS422 Output
7. Tx-	RS422 Output
8. Rx+	RS422 Input
9. Rx-	RS422 Input

Secondary Environmental Enclosures are available for additional protection including Air/Purged, Air Cooled, Air Conditioned and Water Cooled with Air Purging.

MDHD20HT Technical Info

Working Range	Natural Surface	0.5 - 20M (1.6 - 65.6FT)	Hot glowing material ≤ 1400°C (2552°F)
Relative Accuracy	Repeatability [1)]	+/- 5mm [1)]	1 Sigma, N infinite
Laser Data	Measurements per second	1000	
	Measurement output	up to 1 ms	For N>1 Moving average time higher
	Measuring Laser	Safety Class I	EN 60825-1:2001
	Laser Divergence	5 mrad	
	Light Spot diameter	4.5cm/7cm/12cm	At 5M/10M/20M
	Red Laser Pointer	Safety Class II	Operates Via serial interface
	Measuring Mode options	Single Value, Continuous & Moving Average	Standard
Outputs	Interface (electrically isolated)	RS232 or RS422	Optional: PROFIBUS DP
	Analog (electrically isolated)	4-20mA (Programmable)	0.3%, Start and Stop
	Digital (electrically isolated)	Dual NPN (Programmable)	Threshold, direction and hysteresis
	Display	4 LED's	Status Function Indicator
Power supply	18 - 30 VDC Isolated	0.25A @24VDC	Electrically Isolated
Environmental	Enclosure Protection Class	IP65	Aluminum Housing, 1.3kg
	Shock & Vibration Rating	IEC 68	
	Temperature Range	Operational: -10°C to +55°C (14 to 131°F)	Storage: -25°C to +70°C (-13 to 158°F)
Amplitude Control	Mechanical	Motorized attenuation wedge	error <5mm

1) Repeatability for typical devices under constant environmental conditions (approx. 20°C , 1013 mbar, same target) after at least 30 minutes power-on time.

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Your Local Sales Representative:

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