MODULOC® Control Systems

MDHD100 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 laser pointer for aiding alignment.***
- ***Measurement Range of over 800M to a Reflector and up to 155M off Natural Surfaces.***
- ***Close-up range blanking for lens dirt & dust suppression.***

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
- Configuration software included
- Optional Network Interface: PROFIBUS DP
- Secondary Environmental Enclosures are available for additional protection for indoor, outdoor crane mounting and elevated temperature applications.

MDHD 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 15M.
- MDHD600 for measurements to a reflector panel at distances over 600M, and up to 1200M when using glass prism reflectors.

Typical Applications

Product Material	Length, width, level and position of product.
Material Handling	Positioning of Automated Storage/Retrieval Systems and other handling vehicles.
Metals Industry	Measure/Position slab, billet, bloom or bar, automatic cutoff and coil diameter.
Crane Control	Positioning of cranes & crane trolleys on X, Y and Z axis.
Collision Avoidance	Distance safety warning between vehicle and reflective target.

ELDP Description

The MDHD100 Laser Distance Meter operates via a unique pulsed time-of-flight (TOF) measurement technique and measures distances to reflectors in a working range of over 800 meters or to natural surfaces in a working range up to 155M. The MDHD100 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 MDHD100 is equipped with a powerful μ-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.

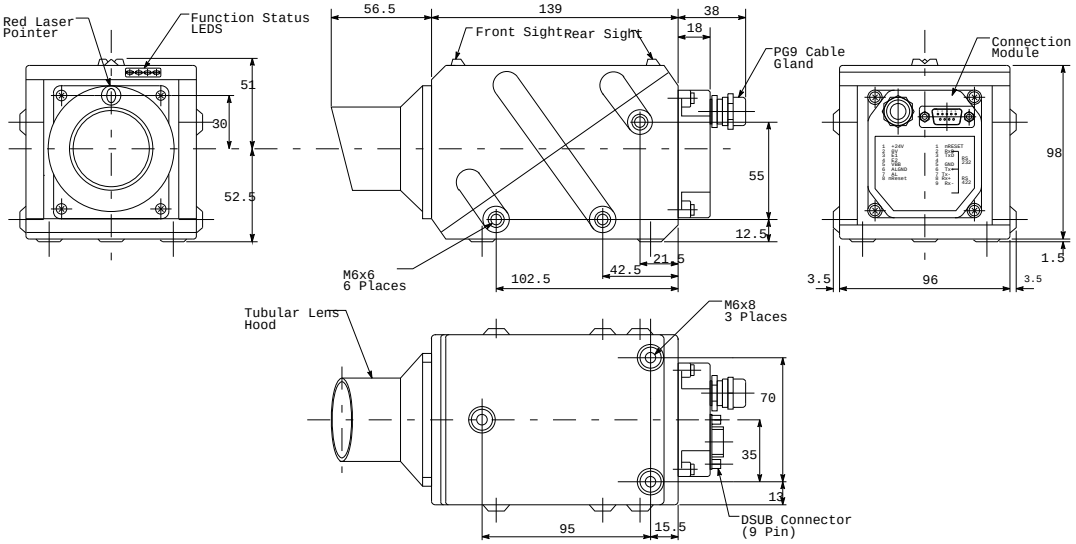
Two programmable threshold bands can be defined. Measurements below these thresholds are indicated via digital outputs & LED's. These thresholds & outputs are programmable via a RS232 or RS422 connection to a computer or a PLC. The MDHD100 is equipped with a switch selectable opto-coupled RS 232, RS422 & 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

MODULOC® Control Systems Ltd.
Wheathamstead, Hertfordshire, AL4 8SB United Kingdom
Phone: +44 (0)1727 821313 FAX: +44 (0)1727 826804
E-Mail: sales@moduloc-intl.com Website: www.moduloc-intl.com

MODULOC® Control Systems, Inc.
2808 Broadway Blvd. - Suite 201B, Monroeville, PA 15146 USA
Phone: 412-824-1260 FAX: 412-824-8890
E-Mail: sales@moduloc-usa.com Website: www.moduloc-usa.com

MDHD100 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 for indoor, outdoor crane mounted and elevated temperature applications.

MDHD100 Technical Info

Typical Working Range off Product Surface (cold or hot up to 600°C) or Reflector	White (90%)	0.5 - 155 M (1.6 - 508 FT) [2]	Light, good reflective target
	Gray (20%)	0.5 - 70 M (1.6 - 230 FT) [2]	Dark reflective target (tree trunk)
	Black (5%)	0.5 - 40 M (1.6 - 132 FT) [2]	Very Dark target (black foam rubber)
	High Gain Reflective Foil	0.5 - >800M (1.6 - 2625 FT) [2]	High Gain Reflective Foil
Relative Accuracy	Repeatability [1]	+/- 3mm [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
	Laser Divergence	5 mrad	
	Light Spot diameter	7cm/52cm	At 10M/100M
	Red Laser Pointer	Safety Class II	Operates Via serial interface
	Measuring Mode settings	Single Value, Continuous & Moving Average	
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 Display
Power supply	18 - 30 VDC Isolated	0.25A @24VDC	Electrically Isolated
Environmental	Enclosure Protection Class	IP65	Aluminum Housing, 1.2kg
	Shock & Vibration Rating	IEC 68	
	Temperature Range	Operational: -10 to +55°C (14 to 131°F)	Storage: -25 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.
2) When close up range blanking is activated the minimum increases to 2M.

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:

nqa. ISO 9001 Registered — UKAS QUALITY MANAGEMENT 015

Bulletin No. MC-MDHD100-08-01
January 2008