BETA LaserMike
An NDC Technologies Brand

LS9000 MID: Non-Contact Length & Speed Measurement System

LaserSpeed
BETA LaserMike

Intelligent, compact non-contact linear encoder with highest accuracy in accordance with European Directive MID

A breakthrough in electro-optics design enables the LaserSpeed® 9000 MID series encoder to produce highly accurate, reliable non-contact length and speed measurements. Coupled with the Beta LaserMike DataPro 1000 MID display, the LaserSpeed 9000 MID system is certified according to the high standards of the European Measuring Instruments Directive (MID). This approval has been granted by the National Measurement Office (NMO) in 2008 under the control number UK/0126/0023.

The LaserSpeed series encoders have no moving parts, use 100% solid-state digital technology, and are permanently calibrated resulting in significant time and money savings. An integrated and enhanced version of autocorrelation, along with an Acousto-Optical modulator, gives the LaserSpeed 9000 series the capability to measure forward and reverse directions and zero speed (no motion). All LaserSpeed series encoders deliver better than ±0.03% accuracy to meet the Class 1 status of the EU Directive (±0.125%).

The MID policy was agreed upon in April 2004 and covers a number of measuring instrument types, including gas and electricity meters, petrol pumps, and automatic weighing instruments. The primary aim of the Directive is to create a single market in measuring instruments for the benefit of manufacturers and ultimately consumers across Europe.

In November 2016, the revised EC Directive 2004/22/EC from October 2006 will be in place. From this date forward, only MID-certified systems will be accepted. Older systems, such as devices with no measurement traceability or ones that have been in long-term storage, will no longer be valid. The LaserSpeed 9000 MID system meets all EU requirements. It is an ideal replacement for mechanical-type encoders (tachometers) that can lose contact on product surfaces due to slippage, vibration, and debris build-up and provide erroneous measurements, and cause damage to material. Our Accredited Customer Services offer installation support for LaserSpeed 9000 MID systems and provide effective communication with the certifying authorities to simplify the transition process.

Benefits

- High accuracy and repeatability
- Direct replacement for tachometers
- No moving parts to wear out
- Permanently calibrated
- Low cost of ownership
- Measures forward and reverse directions and zero speed (no motion)
- Provides long-term data storage with traceability of measured values
- Non-contact length and speed measurement
  - No slippage
  - Non-marking
  - Not affected by material surface or color

Range of Applications

LaserSpeed gauges are well suited for a range of applications, including, but not limited to, measuring length and speed of:

- Wire, cable, and optical cable
- Paper and corrugated products
- Web products
- Non-woven products
- Rubber tube and hose
- Plastic pipe and tube
- Plastic films and tapes
- Building materials

Accessories

- **Guide Rollers/Height Stand**
  Various guides and height stand options are available for standard applications.
- **Laser Safety Enclosure**
  Protects operators from direct or indirect laser beam exposure. Meets the EU laser safety requirements.

LS9000-3XX MID	-303	-306
Standoff Distance	300 mm (12 in.)	600 mm (24 in.)
Speed Range	0 to ±2000 m/min (0..±6,560 ft/min)	0 to ±2000 m/min (0..±6,560 ft/min)
Measurement Depth of Field	35 mm (1.4 in.)	50 mm (2 in.)

LS9000-3 MID (Continuous Length/Speed Measurement)

Accuracy	±0.125% of reading (instrument accuracy better than ±0.03%)
Repeatability	±0.02%
Measurement Rate	>20000/s
Acceleration Rate	>500 m/s²
Status via Serial I/O (Gauge)	- Laser at Temperature - Laser On - Shutter Open - Valid Measurements
Serial I/O (Controller) Data Available	- RS-232 ,Ethernet - Length, Length Report - USB Printer port
Serial Baud Rate	- 1200, 2400, 4800, 9600, 19.2K
Status via Serial I/O (Controller)	- Length - Date - Time

Controller Power	- 120/240 @ 4 Amp (including Gauge)
Spot Size	- 3 x 5 mm
Gauge Size	203 X 159 X 95.2 mm (8.0 X 6.3 X 3.75 in.)
Gauge Weight	3.4 kg (7.5 lbs)
Ambient Temperature	5 to 40°C (41 to 104°F) Cooling/heating is required for temperatures outside this range
Relative Humidity	Non-condensing 65%
Degree of Protection	IP67 (Gauge) IP54 (Controller)
Units of Measure	- m/min

Specifications are subject to change without notice.

Inputs

Input	Description	Details
1	End of Reel Report	Prints the Date, Time & current length to the USB printer port
2	Transmit Length	Outputs the Date, Time & current length over RS-232
3	Transmit Length Report	Outputs the Date, Time, Machine Number, Product Number & current length over RS-232
4	Transmit Stored Data	Transmit the stored flash memory data (last 90 days) over the EtherNet port
5	Length Reset	Resets the current length

Outputs

Control Output Type	Length Measurement Mode			
	Relay 1	Relay 2	Relay 3	Relay 4
Relay Closure	Preset Length Reached	–Preset Length Approach	Quality Factor Warning	Quality Factor Reject

This unit is a class 3B laser product and Complies with EN60825-1:2001. Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.

The following safety features required to comply with the Bureau of Radiological Health Class IIIB laser requirements are included:

- Key-operated power switch on optional controller
- Laser indicator light on supply and laser
- Delayed laser startup-laser indicator light on prior to laser radiation
- Laser beam blocking device
- Interlock capability for remote shut-off

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Measured by Commitment