LINEAR DISPLACEMENT TRANSDUCER

The magnetostrictive linear displacement transducer (LDT) offers a non-contact, wear free and accurate linear positioning. They are used in rugged industrial environments wherever linear motion must be controlled.

A series of stress waves are generated on a magnetostrictive wire that is under tension from the transducer head to the end of the guide tube. A piezoelectric crystal located in the head of the LDT generates the stress wave, or torsional twist. The torsion twist signal travels down the magnetostrictive wire at constant speed of approximately 9.3 microseconds per inch.

When the torsion twist signal interfaces with a moveable magnet, located in close proximity to the guide tube, and electrical voltage spike is generated on a return wire also locate within the guide tube. The voltage spike travels back to the head of the LDT. The time between the launch of torsional pulse and the receipt of the return pulse is directly proportional to the distance between the trigger crystal and the moveable magnet.

DESIGN FEATURES:

- Highly accurate 16 bit analog to digital converter allows for 0.001" resolution on analog units with up to 65" strokes.
- Small ruggedized head assembly with MS connector as a standard feature.
- 2.25" dead span and a 1.5" null zone is standard.
- Single power supply requirements (+15 VDC to + 26 VDC).
- Analog units field programmable for span, zero reference, voltage type, polarity, and so forth via a hand held programmer, PLC or PC. RS422 style units also offer many programmable features.
- Shock and vibration resistant.
- On board microprocessor allows programming of special input/output requirements for custom applications.
- Suitable for mounting within hydraulic cylinders at pressures up to 3000 psi continuous, 8000 psi peak.
- Units with serial outputs of position/velocity data available upon request.
- Systems available include: RS422 pulse width modulated, RS422 pulse in/pulse out and TTL level pulse/pulse, RS422 pulse in/pulse out with interrogation.
- High degree of linearity even at higher temperatures.
- Optional electronics available for digital and limit switch options.