

Temposonics®



Magnetostrictive, Absolute, Non-contact
Linear-Position Sensors

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Plastics Industry Flyer



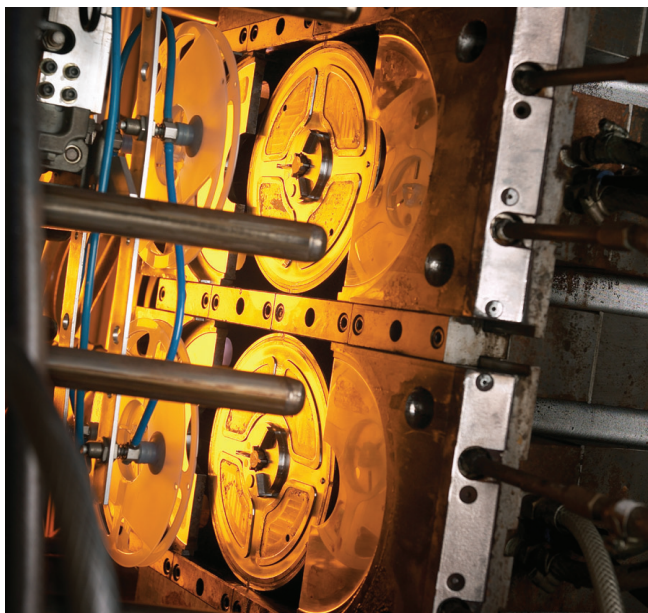
The Measurable Difference

MTS' Proven Solution

Accuracy, Value + Versatility = Profit

High Performance

Temposonics position sensors provide high-accuracy, dynamic position measurement for high-performance plastics machinery reducing cycle times and ensuring product quality. Embedded inside injection molders, for example, it enables the quickest possible mold movement with precise control. In the long run, a lack of accuracy would cause either the destruction of the mold or the formation of burrs. The high-performance R-Series product family offers 1 micron resolution and absolute position measurement update rates up to 10 kHz. This enables high-speed injection control to minimize material consumption and maximize productivity.



Reliability

Every machine could benefit from improved reliability. All of MTS's Temposonics sensors feature the benefits of magnetostriction for reliable and robust linear position feedback. The E-Series product family provides an Efficient and Effective package for plastics machinery. The new E-Series now offers simultaneous measurement of two position magnets for further reduction in the per axis cost.

MTS Product Families Meeting Industry Needs

R-Series Sensors:



Our highest performing magnetostrictive linear-position sensors available.

- SSI, EtherCAT®, Profibus-DP, DeviceNet, CANbus and EtherNet/IP™ outputs
- Multi-position and velocity with update rates up to 10 kHz
- Non-linearity $< \pm 0.01\%$ Full stroke
- Repeatability $< \pm 0.001\%$ Full stroke
- 25 mm (1 in.) to 7620 mm (300 in.)

E-Series Sensors:



Magnetostriction performance and a lower life-time cost alternative to potentiometers:

- Analog and start/stop outputs
- Dual position outputs
- Non-linearity $< \pm 0.02\%$ Full stroke
- Repeatability $< \pm 0.001\%$ Full stroke
- 50 mm (2 in.) to 3000 mm (120 in.)

Be Absolute with MTS Sensors

Performance and Reliability

For many years the plastics industry has relied on the accuracy and reliability of Temposonics magnetostrictive position sensors as a critical component of modern plastics processing machines.

Downtime and lost productivity are expensive. The robustness and reliability of Temposonics position sensors can greatly reduce these costs, and quite often, can extend the life of the machine.

The Challenge ...

The conventional solution of position feedback by potentiometers is no longer suitable, mainly because of their high susceptibility to wear and lower performance. Signal transmission by means of sliding contacts limits the typical lifetime to 100 million movements. This value can easily be reached in a short time, especially with machines featuring short cycle times. To avoid frequent operation errors and machine downtime, the measuring system should offer a significantly longer lifetime.

MTS' Sensors Meet The Challenge

The best solution is to use magnetostrictive position sensors. Due to their non-contact measurement technology they are extremely reliable, non-wearing, maintenance-free and provide a long service life. All of MTS' sensors feature the Temposonics technology that combines the performance you need with reliability you can trust.

Shock and Vibration Resistance

Temposonics position sensors offer high reliability under harsh environmental conditions. Based on superior technology and continuously improved construction, these magnetostrictive devices are insensitive to contamination, provide stable accurate output while subjected to vibration up to 30 g and can withstand shocks up to 100 g. Excellent immunity to interference ensures smooth sensor operation without maintenance expenses and downtime, and therefore is the most cost effective position measurement solution for the complete life cycle of the machine.

Proven Position Sensors for Plastics Industry Applications Added Benefits of Temposonics Technology

High-speed, accurate position feedback along multiple motion axes in a plastics processing machine can provide considerable improvement of the production process. For example, a typical injection molding machine measures parameters including:

- **Positions of the injection unit and ram**
- **Movement of the mold platen**
- **Ejector movement**
- **Tie bar extension**

The multi-position capability of MTS Sensors means that many applications can reduce the number of sensors by combining parameters such as the injection unit position and ram position into a single sensor.

There are numerous examples of magnetostrictive position sensors throughout the vast field of the rubber and plastics processing industry. These include, for example, injection molding machines, blow molding machines, dosing machines, extruders, thermoforming machines, coating machines, rubber mixers, film cutting machines, and many others.



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