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Magnetostrictive technology offers reliability and durability over time...

MTS Sensors' Linear-Position Sensors Provide Absolute Position in Machine Tooling Applications

CARY, N.C. (September 8, 2008) - MTS Systems Corp., Sensors Division's Temposonics® R-Series linear-position sensors provide reliability, durability and consistency in machine tooling applications due to the absolute position inherent in magnetostrictive technology. Temposonics position sensors utilize non-contact technology, so they provide wear-free measurement for the highest standard of repeatability and long-term stability. In a machine tooling environment, other sensor technologies can be compromised due to shock and vibration, and the wearing away of parts over time can change resistivity and result in inaccurate position readings. Due to the linear operation of absolute length measurement, the need for time-consuming zero-setting by reference marks is omitted in magnetostrictive sensors so re-calibration is not necessary throughout the sensor's lifetime.

"In machine tooling applications, absolute position means reduction in setup time, consistent product output and greater productivity," said Matt Hankinson, marketing manager, MTS Sensors. "Combine this with performance of the R-Series' smart sensor platform, and those customers will see a significant return on investment."

According to Hankinson, the technology offers customers in the machine tool and related industries a reliable, lower-cost alternative to typical linear encoder scales while improving safety and setup time with the benefits of absolute positioning.

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Absolute position feedback is preferable to the incremental approach in machine tooling because the latter only tells how far something has moved from its previous location. The downside to incremental encoders is that if power to the sensor is lost during operation, the controller will not know where the current position is. Even if the machine controller is able to remember the last position, there is no guarantee that all other machine parts are where they need to be to resume operation, which can cause lost productivity due to damaged parts or the need to reset machine conditions to avoid such damage. An absolute position sensor, however, will provide the absolute position upon restart so no “re-homing” or re-calibration of the sensor is necessary.

Machine-tooling customers recognize the greatest value in the R-Series’ SSI interface’s absolute position feedback; high resolution and range; fast serial data communication; and synchronization with precise clocking signals from the host. Temposonics R-Series sensors can resolve position repeatedly to as low as 1 micron, enabling high-precision absolute positioning for long travel applications such as those found in machining centers (up to 5 meters) with a single sensing device.

The SSI output of the R-Series sensor product is fast, with an optional data update rate of 250 microseconds synchronized with an external control clock, regardless of stroke, with as few as 16 microseconds between measurement data clock cycles. MTS’ proprietary synchronization technology guarantees the most accurate position output while minimizing inherent system-related delays to produce smooth, precise velocity loop control. MTS has also added two additional output options for the SSI sensor - one that measures the difference between two position magnets and one that measures sensor speed.

For more information on Temposonics Sensors, please contact: MTS Systems Corp, Sensors Division, 3001 Sheldon Drive, Cary, NC 27513. Phone: (919) 677-0100. E-mail: info@mtssensors.com or visit their web site at http://www.mtssensors.com.

MTS Sensors, a division of MTS Systems Corp., is the global leader in the development and production of magnetostrictive linear-position and liquid-level sensors. Based on MTS’ patented Temposonics® technology, the Sensors Division is continually developing new ways to apply magnetostrictive sensing technology to solve critical applications in a variety of markets worldwide. With facilities in the U.S., Germany and Japan, MTS Sensors Division is an ISO 9001 certified supplier committed to providing innovative sensing solutions that deliver customers with reliable, cost effective sensing devices.

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