

UK showcase for sensors and systems to feature latest position feedback encoders

Renishaw offers a wide range of compact optical and magnetic position feedback encoder systems to meet the diverse requirements of industrial automation. The latest additions to the range will be on show at the MTEC exhibition being held at the National Exhibition Centre (NEC), Birmingham, UK, from 15th to 16th February 2006.

MTEC covers new developments in the sensor, measurement and instrumentation industry, which the exhibition organiser reports is currently developing very rapidly. Additionally the show features a dedicated section for Industrial Networks for Fieldbus and Open Systems, which showcases proprietary systems, open systems and the industrial use of Ethernet. Renishaw will be exhibiting at stand D11.

Visitors to MTEC will be able to see additions to Renishaw's innovative SiGNUM™ range of encoders, including the new RELM high accuracy linear scale, the latest SiGNUM™ software for real-time system diagnostics, and new miniature magnetic rotary encoders. There will also be the chance to see a range of high-performance ultra-high-vacuum (UHV) encoders, plus hear about full details of improvements in speed, resolution and reliability to Renishaw's standard optical encoder lines of RG2 and RG4 linear encoders.

A new SiGNUM™ family of rotary and linear encoders continues Renishaw's reputation for delivering encoders that offer ruggedness and precision, resulting in levels of performance previously possible only from fine-pitch systems too delicate for many industrial roles.

The new SiGNUM™ encoder range offers high accuracy, resolution and repeatability with high speed, high operating temperatures, ultra-low cyclic error (typically $<\pm 40$ nm) and innovative *IN-TRAC*™ optical reference mark, which remains phased over the entire speed and temperature specification. The system offers intelligent signal processing, ensuring excellent reliability, whilst comprehensive SiGNUM™ software enables optimum set-up and real-time system diagnostics via a PC's USB port.

The SiGNUM™ RELM high accuracy linear encoder comprises the SR readhead, Si interface and 20 micron RELM scale, which is offered in defined lengths. Initially available in Invar, which provides a low thermal expansion of 1.4 micron/m/°C, the RELM scale is offered with a choice of *IN-TRAC*™ reference mark positions and dual optical limits. Together with the robust, yet highly precise 20 micron spars, this enables the RELM to offer accuracy to ± 1 micron and resolution to 20 nm, satisfying the most demanding precision motion requirements.

The SiGNUM™ RESM angle encoder is a one-piece stainless steel ring with 20 micron scale marked directly on the periphery. It features the *IN-TRAC*™ optical reference mark, which repeats, regardless of direction, at operational speeds of over 4,500 rev/min (52 mm diameter) and up to 85 °C.

A powerful component of Renishaw's new SiGNUM™ family of rotary and linear encoders is the PC-based SiGNUM™ software that provides comprehensive calibration, set-up optimisation and real-time diagnostics.

The result is both simplified installation of the encoder system and on-going system maintenance, further enhancing a rugged encoder range that delivers levels of performance previously possible only from fine-pitch systems too delicate for many industrial roles.

The SiGNUM™ Si interface is connected to the PC via a USB connector and offers a range of features and benefits, including real time signal monitoring, readhead pitch adjustment, calibration of the encoder reference mark and incremental signals, remote system monitoring, advanced error logging and system configuration analysis.

Meeting demand for reliable, low-cost, high-speed rotary encoders, Renishaw's miniature magnetic rotary encoders provide class-leading performance along with ruggedness and durability. The magnetic encoders are available in component, modular and packaged shaft-style models, including the RM family of magnetic encoders which offers up to 4,096-count positioning resolution, accuracy to 0.3°, and operating speeds to over 30,000 rev/min.

Non-contact magnetic design eliminates seals, bearings and moving parts for lifetime reliability. Standard models provide excellent shock and vibration resistance, while optional sealed models allow application in harsh environments and even immersion. Low cost, compact size and design simplicity enable use in a wide range of industries.

Other products on show at MTEC include:

- Actuators - drives, pumps, switches, valves
- Analysers - data, gas, spectrum, thermal
- Calibrators - temperature, pressure, flow
- Components
- Connectivity
- Controls controllers - PLCs, telemetry, systems, timers
- Control software and systems
- Drives
- Data acquisition - loggers, printers, recorders, SCADA
- Ethernet & Fieldbus
- Industrial networking - Bluetooth, Ethernet, bus systems, hardware
- Industrial PCs & PLCs
- Instrumentation - test, field, analytical, laboratory

- Intelligent valves and actuators
- Intrinsic safety
- Quality Assurance - corrosion, hardness, materials, leaks
- Radio networking and SCADA
- Signal conditioning - amplifiers, filters, software, signal generators
- Sensors - contact and non-contact sensing for test, measurement, data acquisition
- Soft PLC technology
- Test and inspection - standards, test houses, NDT, environmental