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**New miniature incremental optical encoder is the essential building block of motion systems**

Renishaw, the global metrology specialist, launches ATOM™ an innovative non-contact optical linear and rotary incremental encoder system that uniquely combines miniaturisation with leading-edge dirt immunity, signal stability and reliability. The new encoder achieves unmatched performance as a consequence of a design which avoids the many compromises traditionally associated with miniaturised encoders.

ATOM, which is available in sizes as small as 6.8 mm x 12.7 mm x 20.5 mm, is the world’s first miniature encoder to use filtering optics with Auto Gain Control (AGC) and Auto Offset Control (AOC). This advanced technology is found in Renishaw’s proven TONiC™ incremental encoder range and provides excellent signal stability and exceptional dirt immunity.

The ATOM readhead is available in a range of formats and delivers unrivalled metrology performance, offering class-leading accuracy with low Sub-Divisional Error (SDE), low jitter, high signal stability and long-term reliability. ATOM offers speeds to 20 m/s (29,000 RPM on a 17 mm disc) and resolutions to 1 nm (0.004 arc second on a 108 mm disc) with a range of linear and rotary (angle) scales available in stainless steel and glass. The readhead also includes a set-up LED to allow quick and easy installation and an auto-calibration routine to enable faster optimisation.

The ultra-compact ATOM incremental encoder is supplied in hi-flex cable and Flexible-Printed Circuit (FPC) variants with both 20 µm and 40 µm scale options. The side-exit FPC version reduces the overall package size and allows integration with PCBs. Customers can also choose from a range of high-accuracy linear glass spars to 130 mm in length, stainless steel tape to 10 m and rotary glass disc scales from 17 mm to 108 mm in diameter.

Optional Ti and DSi interfaces support interpolation factors to 20,000 allowing outstanding metrology and unmatched dynamic performance. Designers can also use the sinusoidal signal output from the readhead for direct connection to analogue drives and controllers. Advanced highly-automated manufacturing processes minimise process variability to assure the highest quality, short lead times and competitive costing.

Applications for ATOM’s ultra-compact readhead include laser scanning, coordinate measurement systems, semiconductor and flat-panel display production, motor drive systems, microscopy and the scientific research sector. The FPC 40 µm format measures just 6.8 mm x 12.7 mm x 20.5 mm and is ideally suited to a variety of space-critical motion control, inspection and metrology applications. ATOM has CE approval and is manufactured in-house by Renishaw under strict quality controls that are certified to ISO 9001:2008, and, like all Renishaw encoders, is backed by a truly responsive global sales and support network.

**-ENDS-**