

## New dual output incremental encoder interface simultaneously provides analogue and digital signals

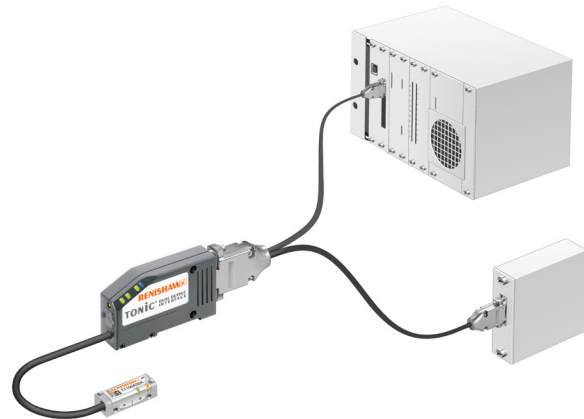
Designed for applications requiring one or more operations to be synchronised with a motion axis, Renishaw's TONiC™ Dual Output (DOP) encoder interface provides simultaneous digital quadrature and analogue 1 Vpp signals via a 26-way D-type connector. Typically, the interface is connected so that the analogue signals are wired to the motion controller, whilst the digital signals (with resolutions to 5 nm) are routed to the timing circuit of a synchronised operation, such as a camera flash on an inspection machine.

TONiC DOP allows the assembly of relevant systems to be significantly less complex, yet boosts performance thanks to high-speed interpolation with advanced CORDIC algorithms. When combined with the TONiC encoder's low-noise optical scheme and dynamic signal processing, the system provides higher speed, reduced jitter, improved repeatability and enhanced velocity control.

The total encoder system comprises a TONiC readhead, a DOP interface which includes the interpolation electronics to match the fit and form of Renishaw's SiGNUM™ Si interface, and a variety of high-performance linear and rotary scales to suit a wide range of applications.



TONiC incremental linear encoders are compatible with a range of scale options, including gold tape scale with integral optical reference marks, Invar® spars with “zero” thermal expansion and  $\pm 1 \mu\text{m}$  accuracy on lengths up to 1130 mm, and robust stainless steel spars



for very high accuracy on long axes. The latest addition to the range is the new *FASTRACK*™ RTLC linear encoder scale system, designed for ruggedness, easy installation and rapid scale replacement, combined with  $\pm 5 \mu\text{m}/\text{m}$  accuracy.

Rotary/angle encoder options are also well served, with RESM rings available in a range of standard diameters from 52 mm to 550 mm, with even larger sizes available as special order items. Furthermore, ultra-high accuracy REXM rings have a total installed accuracy better than  $\pm 1$  arc second on ring diameters greater than 100 mm, when used with dual readheads.

As with all Renishaw encoders, TONiC incremental encoders are backed by a truly responsive global sales and support network. Furthermore the product satisfies the highest environmental standards, with both WEEE and RoHS compliance.

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