

## All the benefits of Renishaw's **SiGNUM™** range of intelligent encoders... now with FANUC serial communications!

The non-contact format and large through-hole of the RESM ring, combined with high accuracy and a rugged IP64 sealed readhead make **SiGNUM™** encoders perfect for machine tool rotary axes. The new Si-FN interface adds FANUC serial communications...

Ideal for use in gear-driven and direct-drive rotary axes, Si-FN provides FANUC serial communications direct from the encoder for higher performance and easier connectivity.



Si-FN interfaces are available with three resolution options. 'Normal' offers 20 bit resolution (0.0003 degree resolution) and speeds up to 4,500 rev/min; 'High Type A' has 23 bit resolution (0.000043 degree resolution), and 'High Type B' interfaces provide up to 26 bit resolution (0.0000054 degree resolution) for the highest precision while still achieving 600 rev/min.

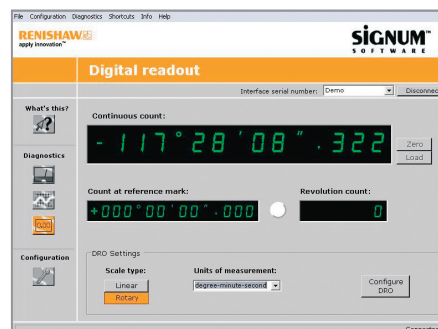
As with the rest of the **SiGNUM™** range, the intelligent Si-FN interface features advanced signal processing such as Automatic Gain Control, Balance Control and Offset Control, to output reliable signals of high fidelity. The result is the best Sub-Divisional Error (SDE) in its class; the SDE of the Ø209 mm Si-FN system is only  $\pm 0.06$  arc seconds... five times

better than competitor optical encoders and more than ten times better than magnetic and inductive encoders.

As well as providing finer resolutions, 'High Type A' and 'High Type B' Si-FN versions feature advanced filtering electronics for the purest signals to improve position stability and velocity ripple by a factor of 2.

Si-FN interfaces with FANUC serial communications can be used with standard **SiGNUM™** readheads and standard RESM rings of 52 mm, 104 mm, 209 mm or 417 mm diameters. This allows the machine or rotary axis builder to easily select Si-FN as a 'last minute' upgrade option.

All position processing occurs in the Si-FN interface so high resolution and high speed combinations are possible that would require unfeasibly high frequency signals if used with traditional digital quadrature. Serial communications also provide exceptional reliability in noisy environments, especially when combined with **SiGNUM™**'s double-shielded UL-approved cable.



All Renishaw **SiGNUM™** encoders can connect via USB to a PC, where comprehensive **SiGNUM™** software enables optimum set-up and real-time system diagnostics, even when in full servo loop control. Si-FN adds a fully-functional DRO (digital readout) for further diagnostics.