

# FANUC

NEW!

## Si-FN with FANUC serial interface...

The new 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:** 20 bit (0.0003°) up to 4,500 rev/min;
- **High Type A:** 23 bit (0.000043°) up to 1,200 rev/min;
- **High Type B:** 26 bit (0.0000054° or 0.02 arc second) up to 600 rev/min.

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.



N.B. Si-FN interfaces are compatible with standard SR readheads and standard RESM rings of 52 mm, 104 mm, 209 mm or 417 mm diameters.

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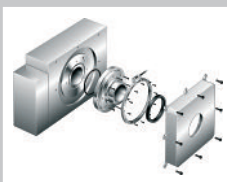
## Redefine your machine's performance...



**Non-contact design eliminates coupling losses and hysteresis errors**



**Exceptional signal purity and lowest SDE mean better surface finish of a machined workpiece \***



**Enables cost-effective upgrade to direct encoder feedback on rotary axes**

\*Photo courtesy of Moore Nanotechnology Systems, LLC



L - 9517 - 9242

**For worldwide contact details, please visit our main website at [www.renishaw.com/contact](http://www.renishaw.com/contact)**

Part no. L-9517-9242-02-A



NEW!

# siGNUM™ angle encoder developments

## The **SIGNUM**™ angle encoder is recognised as the encoder of choice for precision rotary machine tool applications...

- **IP64** 'recoverable'\* readhead
- **NEW!** Even lower cyclic error;  $\pm 30$  nm
- **High immunity** to dirt, water, oil and dust
- Designed for **high shock / vibration** environments
- **NEW!** Now with resolutions to **0.0038 arc second**
- Capable of operation up to **85°C** and **4,500 rev/min**
- Graduation **accuracy to  $\pm 0.5$  arc second**
- Available in diameters from  **$\varnothing 52$ mm to the **NEW!**  $\varnothing 550$  mm ring**
- **Patented taper mount** minimises errors and simplifies integration
- **Non-contact** optical performance
- **IN-TRAC**™ auto-phase, optical reference mark, repeatable over entire temperature and speed specification
- Up to **10 m cable** from readhead to Si interface, plus up to **50 m** to controller and **NEW!** in-line connector option



\* Wipe clean recovery from coolant splashes or floods

The lowest sub-divisional error in its class

## DSi (Dual **SIGNUM**™ interface)...

By combining the incremental signals from two **SIGNUM**™ encoders, Renishaw's new DSi compensates for the effect of bearing wander and eliminates odd error harmonics including eccentricity. The result is **total installed accuracy of typically  $\pm 1.8$  arc second** with a  $\varnothing 209$  mm RESM ring.



## **NEW!** Patented *propoZ*™ reference (index) position...

DSi provides the customer located *propoZ*™ reference (index) position, which is angularly repeatable regardless of bearing wander or power cycling. The desired *propoZ*™ reference position is selected by driving the axis to the chosen angle and simply pressing a button. The patented *propoZ*™ reference (index) is then stored in the DSi's memory and locked to that angle, so even if the centre of rotation of the axis moves whilst the DSi is switched off, angular repeatability is assured.

## REXM ultra-high accuracy ring...

For the ultimate angular metrology, REXM with DSi offers exceptional repeatability, zero coupling losses and **better than  $\pm 1$  arc second total installed accuracy**.

Like the RESM, the REXM stainless steel ring has graduations marked directly onto the periphery. However, it features a thicker cross-section designed to minimise all installation errors except eccentricity.

The remaining eccentricity is easily corrected using the combined output of two **SIGNUM**™ encoders. Once the DSi has eliminated eccentricity, the only other errors remaining are graduation and SDE - both of which are minimal.



For further information, please visit [www.renishaw.com](http://www.renishaw.com)