

Renishaw debuts all-in-one optical incremental encoder

VIONiCplus™ is Renishaw's new highest performance optical incremental encoder system that has been launched as part of the VIONiC™ digital all-in-one encoder series. The VIONiC design combines all necessary interpolation and signal processing inside the readhead and eliminates the requirement for additional external interfaces. To this end, Renishaw developed a new Versatile Interpolation ASIC (VIA) chip to perform all of the functions originally executed by the interface. Other features, working in conjunction with the Advanced Diagnostic Tool (ADT), bring the end-user wide-ranging monitoring and diagnostic feedback.



The VIONiCplus incremental encoder is the culmination of research into the latest fine compensation architectures and advances in modern optimisation algorithms leading to unparalleled heights of performance. By leveraging advances in digital interpolation and signal processing techniques, Renishaw has built an encoder with Sub-Divisional Error (SDE) below ± 10 nm – unprecedented from a 20 μ m-pitch scale. VIONiCplus is the first conventional optical encoder to deliver the performance advantages of ultra-fine pitch (< 4 μ m) systems with the additional benefits of better yaw and ride-height tolerance, easier installation, smaller system size, higher speeds, more flexible scale options including longer lengths, better dirt immunity and lower cost.

An example application is scanning, for instance 3D LiDAR, which relies on precise constant-velocity control of a rotary motor in order to limit measurement errors at long range. The VIONiCplus incremental encoder is the ideal solution as it provides exceptionally low SDE that minimises velocity ripple. Furthermore in motion control, the encoder's high 2.5 nm resolution and low 1.6 nm RMS jitter reduce position settling time and increase stage repeatability.

The VIONiC series of incremental encoders has CE approval; is manufactured by Renishaw, using

strict quality controlled processes that are certified to ISO 9001:2008; and, like all Renishaw encoders, is backed by a truly responsive global sales and support network. The VIONiC encoder series is available to order from August 2016.

For further information on VIONiC, visit www.renishaw.com/vionic