

Renishaw launches next generation of digital encoder

Renishaw, the world-leading metrology specialist, is adding to its extensive optical encoder range with the launch of the VIONiC™ series, a new family of ultra-high accuracy, super-compact all-in-one digital incremental encoders.



Designed for the world's most demanding motion control applications, this development brings together Renishaw's renowned filtering optics with a new custom interpolation and monitoring ASIC (Application-Specific Integrated Circuit) that enhances dynamic signal processing and improves signal stability. This achievement has allowed Renishaw to create its highest performance incremental encoder system so far, at the same time combining all necessary interpolation and digital signal processing inside the readhead to eliminate the requirement for additional external interfaces.

The VIONiC range has been designed to reduce overall system size to the minimum achievable for a high-performance system, whilst delivering class-leading performance in terms of cyclic error, jitter and accuracy. Customers can choose between two VIONiC readhead variants. The standard VIONiC readhead features a Sub-Divisional Error (SDE) of $\leq \pm 30$ nm, a range of available resolutions from 5 μ m to 20 nm, and speeds beyond 12 m/s. Alternatively for the most demanding performance requirements, customers can select VIONiCplus™ with best-in-class SDE to $\leq \pm 10$ nm, low jitter to 1.6 nm RMS and resolutions from 100 nm down to 2.5 nm. Low SDE encoders are essential to minimise velocity ripple, which is important in constant-velocity applications such as laser scanning.

VIONiC series encoders are available with the same linear and rotary (angle) scale ranges as the TONiC™ series, such that existing customers may choose to install VIONiC as a drop-in replacement. Available scale types include metal tape, spar, and rotary rings (including ultra-high accuracy REXM). All VIONiC scales come with customer selectable IN-TRAC™ reference marks embedded in the incremental channel and dual-limit switches in the case of linear scales.

Unrivalled ease of set-up and calibration is supported by an Advanced Diagnostic Tool (ADT), which includes user software that allows control and monitoring of VIONiC's set-up and calibration routines. New software features include: enhanced graphics, automatically generated plots of signal strength vs position, Lissajous plots, DRO output, and readhead pitch indication. This set-up tool is ideal for factory production-line installation as it allows remote, advanced calibration features.

The VIONiC family of incremental encoders has CE approval and 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