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*For immediate release*

**Ground-breaking absolute linear encoder now compatible with Mitsubishi serial communications protocol**

Renishaw's RESOLUTE™ absolute optical encoder is now compatible with the Mitsubishi serial communications protocol in linear encoder formats. This allows RESOLUTE to be used with Mitsubishi’s MELSERVO-J4 range of servo amplifiers, which are regularly used in industries such as electronics assembly, flat panel display (FPD) manufacturing, factory automation and general motion control applications.

A priority for these industries is to increase throughput, accuracy and machine performance, thus the choice of a dependable, accurate and rapid encoder for status-reporting to the servo drive is vital. RESOLUTE true absolute encoders are the key to accurate motion control where axes can be run harder, for longer; meaning up-time, throughput and yield are maximised. RESOLUTE linear encoders boast sub-micron accuracy, a super-fine resolution of 1 nm and impressively high speeds of up to 100 m/s. Therefore SMT machines, PCB drilling machines, and other electronic assembly machinery can achieve higher cph (components per hour) ratings, drill PCs faster and reduce inspection times with RESOLUTE.

Furthermore, RESOLUTE is a true absolute encoder, meaning it accurately reports the position of axes immediately upon switch-on, prior to any movement. This eliminates the need for reference returns and provides instant commutation for linear motors, so machines can be re-started more quickly and in a secure, controlled manner. Indeed, if work is in progress and a machine suffers power loss, the RESOLUTE absolute encoder allows the machine to maintain complete control and security of valuable parts and tooling. For example, fragile glass sheets for LCD production can be extracted safely, with greatly reduced risk of collision.

Not only do Renishaw encoders provide high speed and high accuracy, they also excel in dynamic performance. The advanced optical scheme of RESOLUTE is designed to minimise short-term errors (often known as Sub-Divisional Errors) that affect velocity ripple. As a result, deviation from the programmed velocity profile can be up to 10 times better than that of competitor systems, facilitating smoother motion dynamics, enhanced servo stiffness and ultra-low hysteresis errors, for outstanding machine performance. As a practical example, on inspection systems in the FPD industry, this can result in faster and more accurate pixel inspection as there is less motion blur and more accurate positioning.

The RESOLUTE absolute encoder achieves this unique combination of performance because it works in a completely different way to any other encoder: RESOLUTE is akin to a miniature, ultra-fast digital camera, taking photos of coded scale. The pictures include redundant data which is cross-checked by error-rejecting algorithms within the readhead, and further data-processing continually monitors position to ensure the integrity of output data and hence safety of operation. The scale is arranged as a single-track of code, which combines absolute position with incremental phase. Compared to the traditional arrangement with two or more tracks, RESOLUTE allows far greater set-up tolerances and delivers excellent immunity to dirt, scratches and light oils on the scale.

RESOLUTE absolute encoders use sophisticated optics to read a variety of fine-pitch, single-track linear scales. Scales include the RELA Zeromet™ scale offering 'zero' thermal expansion and ±1 µm accuracy on lengths up to 1130 mm, RSLA stainless steel spars with a total accuracy of ±4 µm over 5 m, and *FASTRACK*™ RTLA for the quickest and easiest installation offering ±5 µm/m accuracy and lengths up to 10 m (up to 5 m on self-adhesive RTLA-S).

The RESOLUTE absolute encoder range is also available with other protocols, including FANUC, Panasonic and *BiSS®*. Rotary (angle) encoder variants are available with certain protocols. RESOLUTE is RoHS/WEEE compliant, has CE approval, is manufactured in-house by Renishaw under strict quality controls that are certified to ISO9001:2008, and like all Renishaw encoders, is backed by a truly responsive global sales and support network.

*BiSS* is a registered trademark of iC-Haus.

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