



## P R E S S   R E L E A S E

### **Modular Angle Encoder from Heidenhain**

A new family of optical scanning angle encoders has been developed by HEIDENHAIN for demanding applications requiring constant speed control or high positional stability. The modular design of the ERP 1000 encoders includes numerous circular scale variants and HEIDENHAIN's HSP 1.0 signal processing ASIC (application-specific integrated circuit), its first ever use in an angle rather than a linear encoder.

The ERP 1000 redefines angular measurement capability in high-end applications, particularly in how flexibly the unit can be integrated into a machine manufacturer's system as well as in the accuracy and robustness of measured value acquisition.

The flexibility with which the encoder can be adapted to an application is achieved through an extensive variety of modules with different circular scale sizes. These variants are available as full-circle and segment versions in diameters of 57 mm, 75 mm, 109 mm and 151 mm, allowing them to accommodate nearly any requirement.

The compact dimensions and light weight of the scales and scanning heads also contribute to their flexibility. The head is 26 mm long, 12.7 mm high, 6.8 mm wide and weighs just 5 grams, while the scales are 10.2 mm high and the

lightest full-circle scale weighs 57 grams. These small dimensions and weights impose almost no limits on how the encoders can be deployed and the low moments of inertia make them ideal for dynamic applications with high shaft speeds up to 2,600 rpm.

The measuring standard of the ERP 1000 family of angle encoders is an OPTODUR graduation on glass. Depending on diameter, different circular scales feature signal periods of 23 000, 30 000, 50 000 or 63 000. In combination with the HEIDENHAIN HSP 1.0 signal processing ASIC, the encoders achieve accuracies of down to  $\pm 0.9$  arc second. They have an interpolation error down to  $\pm 0.02$  arc second and RMS position noise can be as low as 0.002 arc second. At the same time, noise immunity during scanning ensures reliability.

As a non-paired system, the ERP 1000 offers generous mounting and operating tolerances. For example, it achieves high measurement accuracies even if the mounting surface for the circular scale has not been perfectly machined. However, the better the mounting conditions, the higher the achievable accuracies.

For the electrical connection of the scanning head to the machine control, a selection of cables and connectors is available. In addition, all of the scanning heads are available with a variety of cable lengths to offer the optimum solution, even in situations with limited space for installation. The incremental signals and the reference signal are electronically adjusted automatically and conveniently with the HEIDENHAIN PWM 21 measuring and test device, facilitating mounting and further simplifying the adjustment process.

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**Two photographs attached:**

1. A new HEIDENHAIN ERP 1000 angle encoder.
2. The segment versions of the ERP 1000 modular angle encoder can be adapted to various mounting situations and yield highly accurate positional values.

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