

APPLICATION NOTE

IMPROVING PERFORMANCE IN PACKAGING, ASSEMBLY, TEST, AND OTHER BACK-END EQUIPMENT WITH MINIATURE HIGH-PERFORMANCE ENCODER SYSTEMS.

Engineers need new technologies to make their designs deliver higher performance and added flexibility... And they need all this at a lower cost. One area that greatly affects this is motion stage design.

Encoder selection is critical to performance. By specifying a high-performance encoder with the smallest position feedback sensor,

especially in the "Z" orientation, engineers can achieve significant reductions in the size and weight of their motion platform. Since a shorter sensor requires a smaller motion stage, weight is reduced; thus acceleration and throughput are readily improved, while manufacturing costs are reduced.

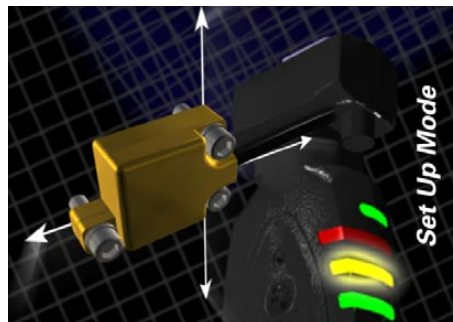
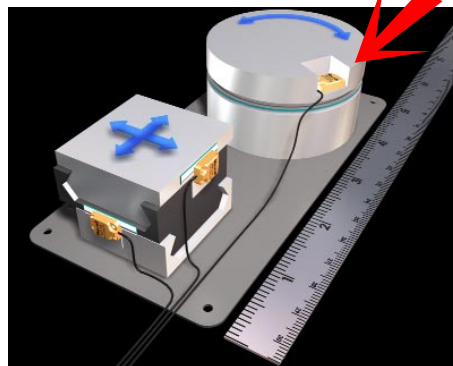
Mercury Series sensors from MicroE Systems enable smaller, faster equipment designs.



Mercury Series encoders streamline the design process because the same sensor may be used for rotary and linear applications.



Mercury 2100 Series encoders feature the smallest position sensor, enabling faster, lighter-weight motion stages.



MERCURY ENCODER SYSTEMS DELIVER THESE BENEFITS

- BEST PRICE/PERFORMANCE RATIO
- SMALLEST SENSOR SIZE
REDUCES MOTION PLATFORM SIZE AND WEIGHT
- SYSTEM FLEXIBILITY
SAME SENSOR FOR ROTARY OR LINEAR APPLICATIONS
- IMPROVE SYSTEM SPEED & THROUGHPUT
SMALLER MOTION STAGES ACCELERATE FASTER
- EASIEST ENCODER ALIGNMENT AND SET-UP
CUTS ASSEMBLY TIME & REDUCES COSTS

Mercury Series encoders can be aligned in under 1 minute. Additional features enable dynamic loop tuning for optimal system performance.

The Mercury sensor is a fraction of the height and volume of other encoder products. Three immediate advantages arise from this feature. First, smaller motion stages cost less to manufacture, lowering total system cost. Second, smaller motion stages result in a more compact system design - a key advantage given the high cost of manufacturing space. Third, smaller, lighter motion stages can be designed, resulting in faster acceleration and improved throughput. One OEM reduced by ½ lb., the weight of each of three motion stages.

In addition to delivering true 7m/sec speed, the Mercury encoder family eliminates much of the expense associated with alignment and set up. Patented microphotonics yield a 50% to 100% greater alignment tolerance. In addition, no test gear or advanced training are needed to perform alignment operations. SmartSignal electronics, built into Mercury's

connector, eliminate the need for external test gear and make index setup as simple as pushing a button. Integral LED indicators allow assemblers to align the encoder in under 1 minute. This dramatically reduces manufacturing costs and simplifies field service should it be necessary.

Finally, encoder flexibility plays a crucial part in system design. In the case of Mercury, the same sensor is used for both linear and rotary applications. In addition, interpolation and maximum quadrature output frequency are programmable using the optional SmartSignal software. The software also facilitates instant technical support over the Internet.

When taken together, the advantages of Mercury Series encoder systems enable engineers to create high performance, high-precision equipment designs at the lowest total cost.