

# Unidrive

## Positioning - Using Closed Loop Vector Motors



Motion Control

If you need to accurately position the motor, but don't require the high speed and rapid acceleration dynamics of a servo motor, the Unidrive SP with an encoder equipped AC induction motor may be the optimum performance solution.

The flexibility and high performance of the Unidrive SP make it possible to control three phase induction motors on applications that previously demanded higher priced servo motors. Point to point indexing and material handling applications are ideal for utilizing this capability, especially when motors above 5 hp are required. The cost savings is significant due to the lower cost of materials used in the induction rotor design.

AC induction motors have rotors with more mass and larger diameters than servo motors of the same torque capacity, and therefore higher inertia. This is helpful for high load-to-motor inertia ratios, and in most cases can eliminate the need for inertia matching gear reduction. The higher inertia of these systems also results in greater low-speed stability.

### Benefits of Vector Motor Positioning

- Overcomes high load inertia mismatches with use of larger AC motors without the expense of large servo motors and/or gear reducers
- Provides precise high-speed positioning when rapid accel/decel rates are not required
- Enables low-cost, error-free closed loop performance in applications that would be cost prohibitive were traditional servo systems used
- Eliminates environmental and maintenance issues associated with hydraulic and pneumatic systems
- Plug-and-play fieldbus integration into full-featured control systems
- Integrated, scalable PLC functionality reduces panel space and wiring costs.
- Simplified programming, quick startup and advanced diagnostics

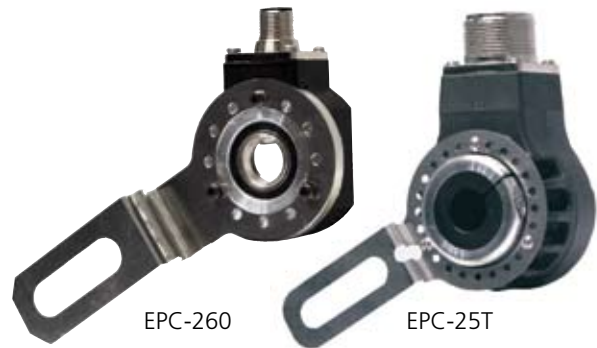
## Positioning - Using Closed Loop Vector Motors

Both Unidrive SP motion programming platforms support closed-loop vector motor positioning applications.

“Motion Made Easy”, PowerTools Pro software and the SM-EZMotion Module can have your vector positioning application up and running in minutes. Alternatively, our IEC-61131-3-compliant ladder logic and function block programming tool, SyPTPro with either the SM-Applications or SM-Applications Lite modules can be used to take advantage of new, industry-standard PLC Open motion functionality.

Many applications today can benefit from the advanced control capabilities, energy savings, cleanliness, noise reduction and advanced communications that AC Vector Motor Positioning, and the Unidrive SP can provide.

Significant cost and performance advantages are achieved over traditional servo systems, hydraulic and pneumatic solutions. The significant power range of the



EPC-260

EPC-25T

Unidrive SP provides positioning of closed loop vector motors ranging from 1 to over 2000 hp and powered with a wide range of voltages from 200V to 690V.

Control Techniques offers a wide selection of Closed Loop Vector motors, which feature an economical incremental encoder and matched cabling. This combination provides users with a “Plug and Play” solution for hundreds of applications that now can be solved using the latest AC motor and control technology to increase performance while lowering overall costs.

### CLOSED LOOP VECTOR MOTORS

- from 1 to 1000 hp
- high performance 2000 to 1 speed range
- encoder ready with cables

For complete information on the new ACCU-Torq vector motor see page 85 at the end of the AC Drive Options section.



To select the correct vector motor for your positioning application, use our free downloadable sizing software, **CTSize**. This simple software tool makes it easy to select the proper motor for your motion application.

More information on CTSize is available in the Software section of this catalog.



1 hp to 25 hp - see the end of the AC Drive Options section for details.