

High Speed Spindles

Application Overview

High speed spindles are commonly used in milling, cutting, grinding and drilling operations. Motor speeds can be as high as 40,000 rpm and ratings of 150 hp are possible. Precise speed control, wide speed range, high dynamic operation and ease of use are essential elements in the VFD specifications for a spindle application. Emerson Control Techniques offers a range of AC, DC and Servo drives with built-in intelligence to suit your spindle control needs.

Application Requirements

Control & Connectivity

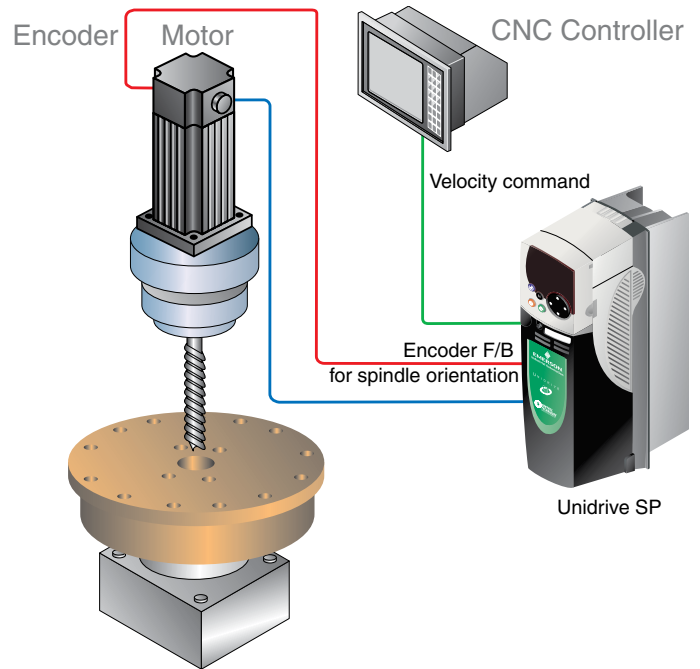
- Wide speed range, high speed operation
- Fast accel/decel profiles
- Continuous high torque operation
- Repeated forward/reverse operations
- Spindle orientation (for fast tool change)
- Built-in braking
- Multiple motor feedback support
- Logic capability
- Induction and servo motor control

Protection

- Motor thermal protection
- Over torque detections

Minimize Operating Costs

- Low maintenance
- Ease of setup



Control Techniques' Solutions

AC, DC and Servo drives

- Power range up to 2900 hp
- Global voltage ratings (115/230/480/575/690Vac)
- Global standards (UL/cUL/CE/C-Tick/ISO9002)
- On-board PLC functionality
- Variety of I/O option modules
- All major fieldbus connectivity options
- RS485 Modbus RTU standard
- Free commissioning software
- Wide range of HMI options
- Industry leading warranties



CONSIDER IT SOLVED™

High Speed Spindle Solutions

Control Techniques' Performance Advantages

Control*

- Universal induction & servo motor control
- Wide speed range
 - Open loop – up to 3,000 Hz
 - Closed loop vector & servo – up to 40,000 rpm
- High speed reference accuracy
 - Open loop – 0.01%
 - Closed loop – 0.01%
- High speed and current loop bandwidths
 - Speed loop – 160 Hz
 - Current loop – 1,100 Hz (3dB)
- Spindle orientation – for quick tool change
- Built-in braking transistors—DC injection braking
- Regenerative braking option
- 15 multiple feedback types including resolver
- Simulated encoder output
- Encoder backup power supply (keeps track of shaft position on power on)
- 16 bit analog input resolution

Total System Protection

- Intelligent thermal motor protection
- Active current monitoring for over & under torque detection
- Built-in diagnostics

Maximum uptime

- Very high quality—Product reliability
- Auto tune—Static and rotational
- Last 10 trips logged

* Features vary by model. Contact your local sales representative for assistance in product selection



World Class Products & Support

- Worldwide Application & Field Service Network
- 24/7 support line 1-800-893-2321



AC Drives

Universal AC / Servo Drives

DC Drives

