

# Engineered Systems

## Total Systems Solutions

When your motion application demands more than panel mount, free-standing, or packaged drives, our Drive Centers stand ready to deliver a comprehensive and cost-effective design, build and start up solution. Our more than 50 Drive Centers worldwide, eight in the United States, provide an invaluable, industrial application knowledge base to apply to our customers' needs. Forty years of building electronic-based drive systems has given us the expertise to build solutions for nearly any application.



Control Techniques engineering and systems centers are located around the country and are staffed by engineers providing expertise to a wide variety of industries:

- Automotive Assembly and Testing
- Mining and Aggregates
- Oil and Gas
- Metals Processing
- Glass
- Plastics and Rubber
- Heavy Moveable Structures
- Water/Wastewater Pumping
- Web Handling
- Power Generation
- Converting
- Packaging
- Printing
- Forestry
- Irrigation
- Ski Lifts

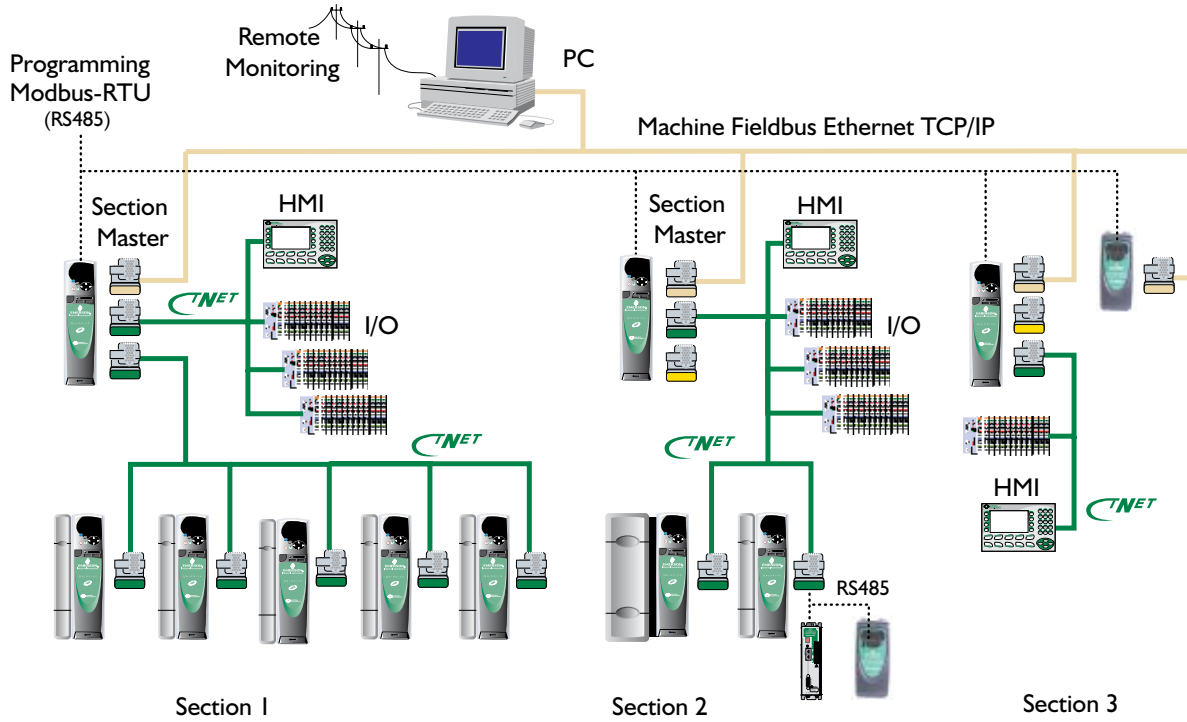
Packaged Drives & Engineered Systems

# Flexible control architecture

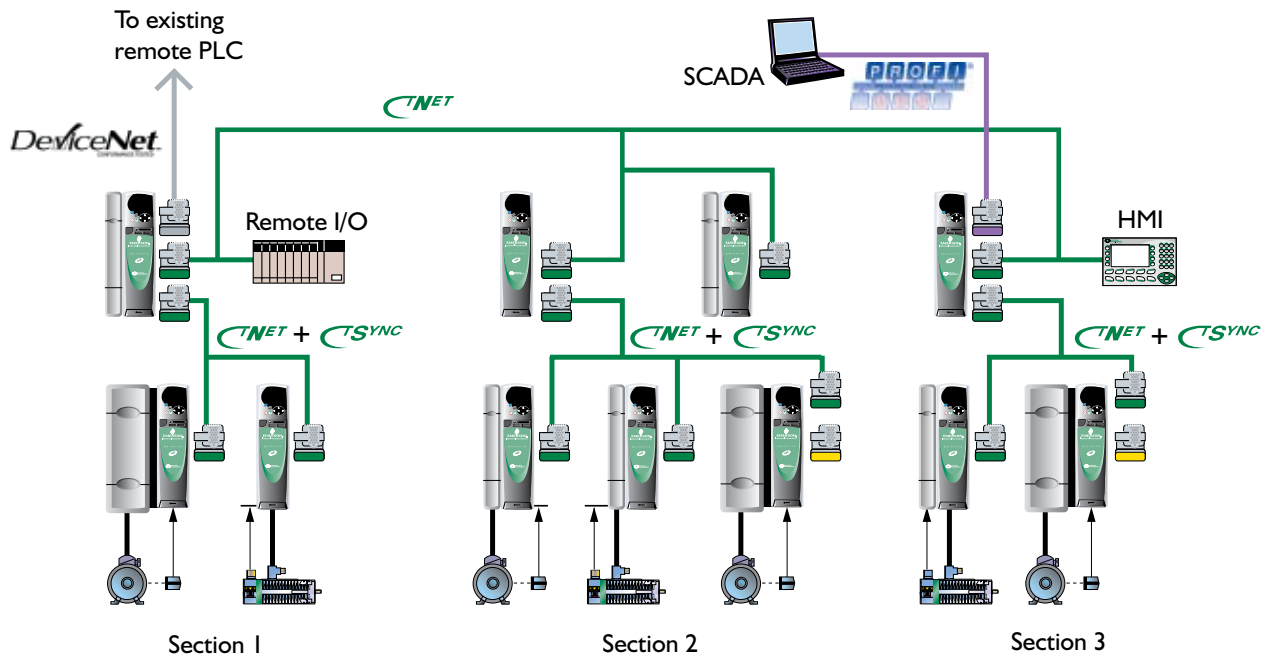
Our drives systems are designed for any control architecture: centralized, distributed, or fully decentralized. The options of scalable PLC functionality within the drive; high speed, peer-to-peer networking; extended I/O capability, and support for all major field-buses, greatly simplifies system integration regardless of the control scheme.

- SM-Applications Plus
- SM-I/O Plus
- SM-PROFIBUS-DP
- SM-DeviceNet
- SM-Ethernet

## Distributed Sectional Control — featuring CTNet and Ethernet communications



## Decentralized Control — featuring CTSync drive-to-drive synchronization with less than 250µsec jitter



Engineered Systems provides its customers with totally integrated systems, which can include:

- Coordinated Drive/Servo Systems
- Four-quadrant Regenerative Systems
- 18-Pulse and 24-Pulse Drives
- PLC and PC-based Control Systems
- Switch gear, e.g., automatic transfer switches
- Custom Fabrication
- Climate Controlled MCC's and E-Houses
- Electrical Control and Instrumentation
- Power Distribution
- Operator Interfaces (HMI)
- Industrial Communications Platforms
- Custom Enclosures



The typical engineered systems program consists of the following components:

- Initial Applications Review
- Proposal and Review
- Order and Project Scheduling
- Hardware Design and Review
- Software Design and design review
- System Training
- Field Startup Assistance

Systems/Features	AC Systems	Motion Control Systems	DC Systems
<b>Control Technology</b>	High Performance open loop and closed loop vector, regen	Rotary and linear servo, and AC Vector Servo	Digital open loop and closed loop, regen and non-regen
<b>Power</b>	.5 hp to 2900 hp	Servo: To 750 lb-in Vector: To 4,500 lb-in	5 hp to 2000 hp
<b>AC Voltage 50/60Hz ± 10%</b>	200V to 690V 3Ø	90V to 690V 1Ø, 3Ø	208-660V 3Ø
<b>Motor Feedback</b>	All major feedback devices supported.		Voltage Feedback (CEMF) AC or DC Tachometer, Encoder
<b>Communication</b>	All major communication protocols supported.		
<b>Enclosures</b>	NEMA 1, NEMA 3R, NEMA 4, NEMA 4X, NEMA 12, and NEMA 12-Positive Pressure, Custom		
<b>Key Options</b>	Operator control stations, Industrial CRT workstations, HMI programming, PLC's, Switch gear, Power distribution, Common DC bus, Speed reducers		