### Introduction

Unico® Drives incorporate powerful Digital Signal Processors programmed to meet the needs of tough industrial applications. These drives take advantage of proven modulation techniques, devoted algorithms and routines, configurable I/O, modular flexibility, and communication extensibility. Since the control programs are embedded within the drives, no external motion controllers are required. The application can be controlled with simple hardware operators or the drives may be linked to a PLC or PC to provide additional functionality.

### Platforms

Embedded applications are available for both the Series 1000 AC Drive and the Series 2000 Performance Drive platforms.

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<th>Series 1000</th>
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<td>S27</td>
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<td>(1) Optional</td>
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<td>(1) RS232 (4) RS485 SSI (non-clocked)</td>
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<td><strong>Optional Comms</strong></td>
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Analog I/O may be operated at +/-10 VDC, +/-5 VDC, or 0-20 mA with the addition of a resistor. Additional Analog I/O may be added using an Analog I/O module installed on the feedback connector of the drive.
Individual control and status bits are used to command and monitor the core drive application programs. These bits may be attached to hardware I/O, the UEdit program, or serial I/O providing maximum application flexibility.

**Analog**
Each drive supports three hardware analog inputs and two analog outputs. Additional I/O can be added by using a feedback channel and an optional Analog I/O module. These I/O operate at +/- 10 VDC, +/-5 VDC, or 0-20 mA.

**Serial**
Both discrete and analog I/O can be configured for serial transmission between PLCs, PCs, or HMIs using industry recognized protocols.

**Communications Industry Recognized Protocols**
The Anybus Slots support standard HMS Anybus modules. The following device level and network level protocols are available:

- CANopen
- CC-Link
- ControlNet
- DeviceNet
- EtherCAT
- Ethernet/IP
- Interbus
- Modbus Plus
- Modbus-TCP
- Lonworks
- Profibus DPV1
- Profibus Master
- ProfiNet

**Drive to Drive Coordination**
Some applications require communications between drives to parallel them for extra power or to coordinate velocity and positioning. A signal may be passed between a master and slave drive using the SSI communication interface. If more complex communications are required, the Series 2000 Drives have the ability to pass this information over a high-speed fiber-optic communication port.

**Wireless Options**
MaxStream and Bluetooth® modules are available for extending drive communications over wireless networks and between mobile devices.

The standard embedded applications may be tailored to meet additional customer requirements using a proprietary Unico programming workbench. UEdit® (Unico Embedded Drive Integration Tools) is a suite of tools for customizing, monitoring, and managing Unico’s embedded drive applications. The software runs on a Windows-based personal computer.

A ladder and function block editor provides a graphical means of programming and monitoring drive functions. Additional tools within the application allow I/O and signals to be monitored and charted in real time.
Unico has standard embedded application programs for a wide range of core applications covering many industries. Unico can also develop custom programs to suit your specific needs.

**General Purpose Applications**

PIC™ Indexer (Positioning) Control  Velocity (Speed) Control

**Metal Processing/Forming**

**Metal Processing Applications:**
- URC™ Unwind/Rewind Control
- LLC™ Loop/Leveler Control
- FTS™ Feed to Stop Control
- FCO Flying Cutoff Control
- MRC™ Metal Rotary Cutoff Control
- DDS Direct Drive Shear Control

**Metal Forming Applications:**
- STF™ Servo Transfer Feed Control
- PSC™ Press/Shear Control
- Embedded Profiler Control

**Test Stands**

- Test Stand Drive
- Engine Dynamometer
- Torque Pulse Simulation
- Battery Simulation System
- Battery Cycling and DC Testing

**Paper Converting**

**Corrugator Applications:**
- Double Facer/Backer Control
- Pull Roll Control
- RCO Rotary Cutoff Control
- Slitter/Scorer Control
- Single Facer Control
- Stacker Control
- Web AOC Shear Control

**Other Applications:**
- Rotary Die Cutter Control
- Rotary Printer Control
- Sheeter Control System
- Scorer Drive System
- ELS- Electronic Line Shafting
- Winders
- Rewinders

**Building Automation/Pumping Systems**

- HVAC Fan/Pump Controls
- Elevator Control
- Synthesis™ Pump Control
- Synthesis™ Parallel Pump Control
- Synthesis™ Multi-Pump Control

**Oil & Gas**

- CRP® Crank Rod Pump System
- PCP Progressive Cavity Pump VSD
- SRP Sucker Rod Pump VSD
- ESP Electric Submersible Pump VSD
- LRP® Linear Rod Pump System

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Unico is a leading global innovator of motion-control solutions for industry. Founded in 1967, the company develops, manufactures, and services variable-speed drives, application-engineered drive products, integrated drive systems, and ancillary products that improve operations by increasing productivity, safety, and equipment life while lowering energy and maintenance costs.

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