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.

	Series 1000	Series 2000	
CPU	X27	S27	E27
Feedback Channels	(1) Optional	(1) Optional	(1) Standard + (2) Optional
Digital I/O	(12) Inputs (6) Outputs	(2) Drive Inputs (2) Drive Outputs (8) Configurable	(2) Drive Inputs (2) Drive Outputs Additional I/O: (16) Configurable (32) Configurable
Analog I/O	(3) 12-Bit Inputs (2) 12-Bit Outputs	(3) 12-Bit Inputs (2) 12-Bit Outputs	(3) 12-Bit Inputs (2) 12-Bit Outputs
Comms	(1) RS232 (4) RS485 SSI (non-clocked)	(2) RS485 SSI (clocked) Fiber-Optic (sync)	(2) RS485 SSI (clocked) Fiber-Optic (sync)
Optional Comms	(1) Anybus Slot (1) Aux Comms Slot	(2) Anybus Slots (1) Command Slot	(2) Anybus Slots (1) Command Slot

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.

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Configurable I/O

Discrete

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
- Lonworks
- Modbus Plus
- Modbus-TCP
- 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 Blutooth® modules are available for extending drive communications over wireless networks and between mobile devices.

User Programmable

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.
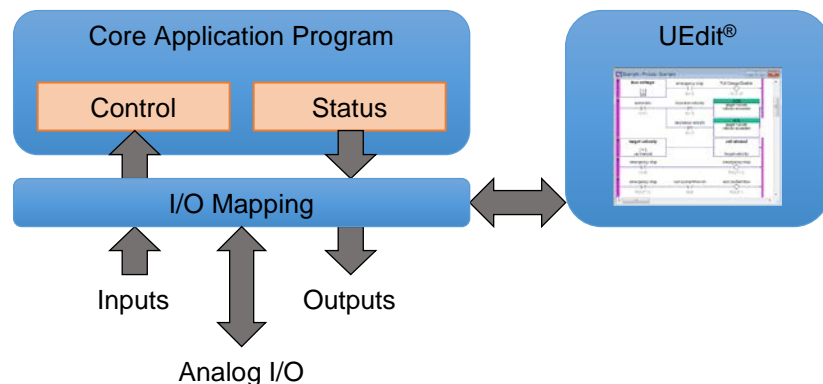
Available Applications

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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Embedded Drive Applications