



## Overview

The RPD™ drive controls a rotary printer for corrugated, paper, and other non-metallic web applications. Specifically engineered printing application software embedded within the drive eliminates the need for an external controller. When used in conjunction with a programmable logic controller (PLC), the drive forms a powerful automation work cell that can be easily integrated with other Unico automation cells to build a complete processing line control system. The drive can also be configured to stand alone with discrete I/O and a dedicated HMI. Embedded control reduces system complexity while taking full advantage of the exceptional performance, flexibility, and ease of use of Unico drives.

## Features **Printing Modes**

The rotary printer control prints on a continuous web or on precut fed sheets. Three different modes offer the choice of printing relative to a leading-edge sheet sensor, relative to registration marks using a mark detector to scan the web, or at a settable repeat interval. Windowing features minimize spurious mark errors during registration printing.

## **Constant-Velocity or Cyclic Modes**

Master/slave control simulates line shafting and can replace traditional mechanical gearing in constant-velocity applications. A cyclic mode allows single or multiple printing plates per revolution of the cylinder, giving the flexibility to run repeat registers longer than the register repeat length of the machine.

## **Dynamic Register Correction**

A dynamic correction feature ensures repeated registration on the fly, eliminating the traditional trial and error as well as the associated scrap. In constant-velocity mode, this feature may or may not be used depending upon the web and printing dies on the cylinder. Small corrections are possible within the revolution when the printing dies are not in contact with the web or where there is minimal contact without web or die damage. In cyclic mode, correction is automatic and occurs during disengaged angle(s) of the printing plates on the cylinder. The maximum correction per cylinder revolution is a scalable variable.

## **Simulators**

Simulation tools facilitate setting up, testing, and troubleshooting a rotary printer system. A line simulator makes it possible to run the printer without material by simulating material feedback. A mark detector simulator provides marks at a specified separation to allow testing in print-to-mark or repeat print modes.

## **Micro Advance/Retard Adjustment**

A micro adjust feature compensates for errors caused by slippage or register mark variation.

**Features Maximum Line Velocity Calculation**

*(continued)*

The program calculates the maximum velocity at which the line can operate in cyclic mode. The velocity is computed using a number of parameters that describe the angles of engagement and number of stops per revolution of the print cylinder.

**Cam Outputs**

Software-generated programmable limit switch (PLS) outputs replace mechanical cams by electronically following the position of the print cylinder. These cams can be used to trigger/cycle external devices with each cylinder revolution.

**Smart AC Digital Drives**

Unico's 1000 and 2000 drive families provide powerful, flexible digital flux vector control for sophisticated, performance-oriented applications. The drives have been designed for complete flexibility and offer a variety of feedback, programmable I/O, and communication options. They incorporate a number of energy-conserving features, including line regenerative capabilities for exporting energy back to the power grid. Both drive families can take advantage of a modular DC bus configuration for sharing or recirculating energy among multiple drives.

**Communication Protocols**

The drive supports a variety of serial communication protocols for connecting to virtually any PLC or HMI. The drive can also operate in a stand-alone mode using the built-in keypad/display or using an ANSI or RTU protocol connection to a simple serial display unit.

- CANopen
- CC-Link
- ControlNet
- DeviceNet
- Ethernet
- Interbus
- Modbus Plus
- Modbus RTU
- Profibus
- Remote I/O†
- RS-232/422/485

*†Supported only by the 2000 family platform*

**Inputs/Outputs**

All inputs and outputs are user-enabled and are mapped to hardware I/O points to allow customization of the control. They are also accessible through a high-speed serial communication link.

**Inputs**

- motor on
- fault reset
- motor thermal ok
- motor blower ok
- jog forward
- goto position
- goto auto off
- auto
- order change
- follow source
- dereference
- print to mark
- skip mark
- set window
- advance offset
- retard offset
- reference switch

**Outputs**

- motor on
- no fault
- no warning
- manual
- auto
- reference
- at position
- line too fast
- print error
- at goto position
- at auto off position
- goto auto off
- batch complete
- early warning
- missed mark
- open window
- print to mark
- cam 1
- cam 2
- cam 3
- cam 4
- cam 5
- cam 6
- cam 7
- cam 8
- motion
- forward motion
- reverse motion
- motor rms warning
- thermal warning
- no reference warning

**UNICO—Worldwide**



*All trade designations are provided without reference to the rights of their respective owners.*

*Specifications subject to change without notice.*

**Corporate Headquarters**

UNICO, Inc.  
 3725 Nicholson Road  
 P. O. Box 0505  
 Franksville, Wisconsin  
 53126-0505  
 USA  
 voice: 262.886.5678  
 fax: 262.504.7396  
 www.unicous.com

**United States**

Wixom, Michigan  
 248.380.7610  
 New Lenox, Illinois  
 815.485.5775  
 Sandy, Utah  
 801.942.2500  
**Canada**  
 Mississauga,  
 Ontario  
 905.602.4677

**South America**

El Tigre, Venezuela  
 58.283.241.4024  
**Europe**  
 Milton Keynes,  
 England  
 44.1908.260000  
 Wilnsdorf, Germany  
 49.2739.303.0

**Asia**

Osaka, Japan  
 81.66.945.0077  
 Beijing, China  
 86.10.6218.6365