

# Allen-Bradley Micro800™ Family of PLCs

Featuring Allen-Bradley Connected Components Workbench™  
Programming and Configuration Software



LISTEN.  
THINK.  
SOLVE.®

 Allen-Bradley • Rockwell Software

**Rockwell**  
**Automation**

# Micro800 PLCs and Connected Components Workbench Software

As a machine builder, are you looking to save money on acquisition costs and machine assembly time?

The next generation of micro PLCs from Rockwell Automation is your answer. The Allen-Bradley Micro800 PLC family, together with the Connected Components Workbench software, sets a new global standard for convenience and ease of use, while providing just enough control capability to match your lower-end application.

## Just Enough Control

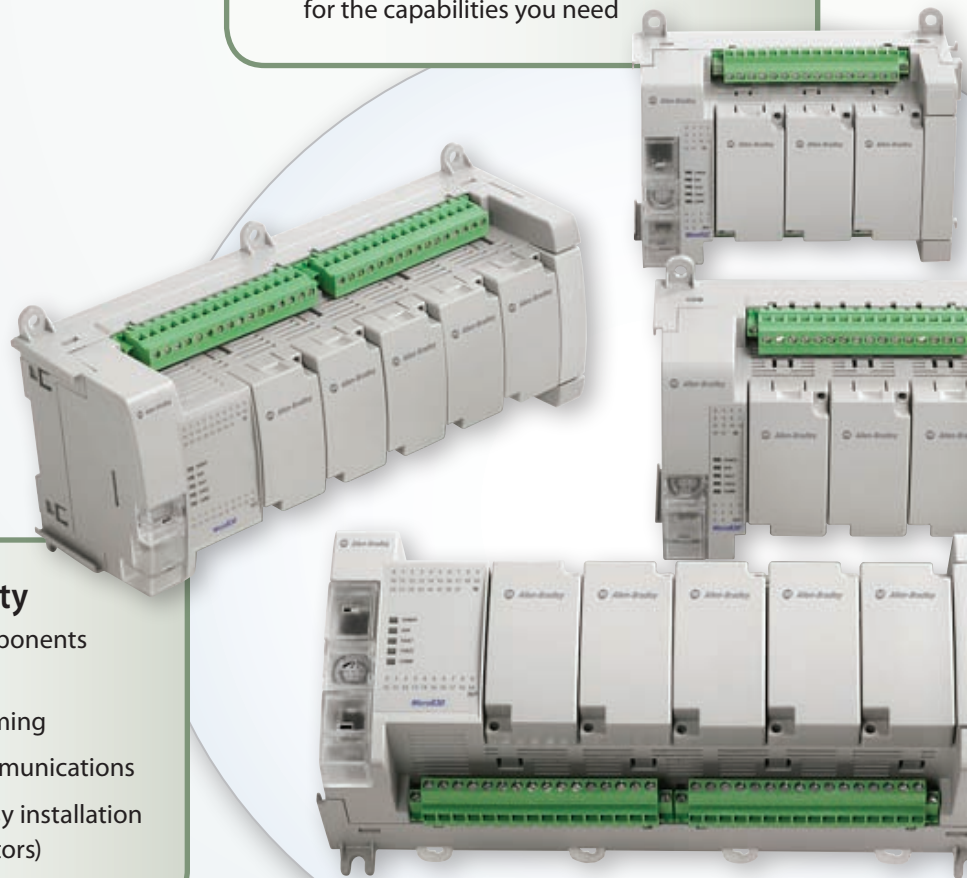
- Wide range of small-size controllers (from 10-48pts) – designed for low cost, standalone machines
- Plug-in modules personalize the Micro800 controller, so you pay only for the capabilities you need

## Convenience and Connectivity

- Entire family shares common components and accessories
- Embedded USB for easy programming
- Simple serial and EtherNet/IP communications
- Removable terminal blocks for easy installation and maintenance (select form factors)

## Easy to Install and Maintain

- IEC 61131-3 standard instructions
- Point-to-Point data exchange for simplified communication
- Automatic Device Replacement





## One Software

- Connected Components Workbench software is used for PLC programming and HMI, Drives, and Motion configuration
- A common user experience helps reduce the learning curve through ease of use
- Standard edition software available as a free download

## Part of the Connected Components Bundle

- Application aids make selection and application easy
  - Pre-built HMI screens and sample programs
  - Panel layout, Bill of Materials and Wiring Diagrams using E-Tools
- Preferred compatibility within the bundle of components
- Reduced supply chain costs
  - Source everything from your local Allen-Bradley Distributor



SENSORS & SWITCHES



CONNECTIVITY



OPERATOR INTERFACE



LOGIC



SAFETY



POWER



DRIVE



# Micro810 – Smart Relay Micro PLC

## Micro830 – Economical Micro PLC with Simple Motion

### Micro810

- The Micro810 controller functions as a smart relay with high current relay outputs, but with the programming capabilities of a micro PLC.
- As part of the Micro800 family, the Micro810 controller shares programming environment, Plug-Ins and accessories.
- 12-pt form factor provides:
  - 8A outputs eliminates the need for external relays
  - DC models allow 4 inputs to function as 4 0-10V analog inputs
  - Program download via USB programming port (adapter required)
  - Optional 1.5" local LCD for monitoring/modifying application data (variables). It also functions as a backup memory module.
  - Configure and run core smart relay function blocks without programming (LCD required)
- 20-pt form factor and 26-pt form factor additionally have:
  - Embedded non-isolated serial port for HMI and communications to other devices
  - Up to 2 Plug-In slots for adding analog I/O, serial port, etc.



### Micro830

- Designed for standalone machine control applications which require simple motion using PTO.
- Flexible communications and I/O capabilities with up to five Plug-Ins.
- Different controller types sharing same form factor and accessories
  - Form factor based on number of I/O points embedded in the base: 10, 16, 24, or 48
- Controllers include built-in support for up to 3 axes of motion
  - As many as three Pulse Train Outputs (PTO)
  - As many as six High-Speed Counter inputs (HSC)
  - 100KHz speed of PTO and HSC available on 24V DC models
  - Single axis moves supported via PLCopen Motion instructions
  - Home, Stop, MoveRelative, MoveAbsolute, MoveVelocity
- Embedded Communications
  - USB programming
  - Non-isolated serial port (RS232/485)





# Micro850 – Expandable Micro PLC with EtherNet/IP 2085 Expansion I/O Modules

## Micro850

- Designed for applications that require more digital and analog I/O or higher performance analog I/O
- Ideal for applications that can benefit from the embedded EtherNet/IP communications (messaging only), which can be used to interface to PCs, PanelView Component HMIs, Kinetix drives and PowerFlex drives
- Same form factor as 24pt and 48pt Micro830 but with 2085 Expansion I/O (up to 4) and embedded EtherNet/IP



## 2085 Expansion I/O for Micro850 controllers

- Easy to install and maintain with removable terminals and LED status
- High density digital and analog I/O; high accuracy Resistance Temperature Detector and Thermocouple

Catalog Number	Description
2085-IQ16	24V 16 Point Sink/Source Input
2085-IQ32T	24V 32 Point Sink/Source Input
2085-OV16	24V DC 16 Point Sink Output
2085-OB16	24V DC 16 Point Source Output
2085-OW8	8 Point Normally Open Relay
2085-OW16	16 Point Normally Open Relay
2085-IA8	120V AC 8 point Input
2085-IM8	240V AC 8 point Input
2085-OA8	120/240V AC 8 Point Output
2085-IF4	4 Channel Analog Voltage/Current Input
2085-IF8	8 Channel Analog Voltage/Current Input
2085-OF4	4 Channel Analog Voltage/Current Output
2085-IRT4	Thermocouple/RTD/mV
2085-ECR	End cap



\*Please see online catalog for product availability

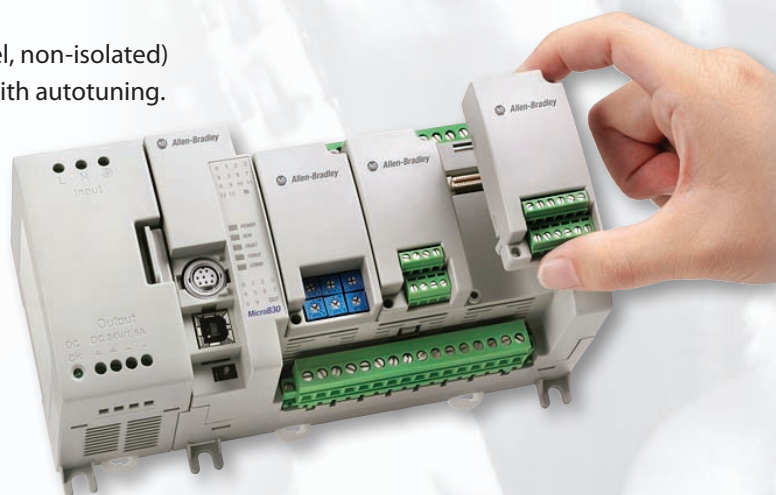
# Micro800 Plug-In Modules

## Change the “Personality” of the Base Unit Controller with Plug-In Modules

- ⇒ Extend the functionality of embedded I/O without increasing the footprint of your controller.
- ⇒ Improve performance by adding additional processing power or capabilities.
- ⇒ Add additional communication functionality.
- ⇒ Utilize Encompass Partner expertise to add enhanced capabilities with tighter integration to the controller.

## Plug-Ins

- **Analog Input / Output** (2-channel / 4-channel, non-isolated)
  - Customize with an unprecedented amount of embedded Analog I/O for a micro PLC. Up to 20 Analog inputs.
- **Resistance Temperature Detector/Thermocouple** (2-channel, non-isolated)
  - Makes temperature control possible when used with PID with autotuning. Transforms the low cost Micro810 controller into a single loop temperature controller.
- **Trim Potentiometer** (6-channel, analog input)
  - Low cost method of adding six analog presets for speed, position and temperature control. Embedded into the controller to avoid casual access by operators.
- **Serial Port RS232/485 (isolated)**
  - Address even the most intensive serial communications tasks with Modbus RTU and ASCII protocol support. Up to five additional serial ports.
- **Micro830/850 Backup Memory with High Accuracy Real-Time Clock**
  - One touch backs up Data Log and Recipes.
  - Supports removal and insertion under power so data can be retrieved without stopping controller. Can also be used to clone/update Micro800 application code.
  - Adds precision real-time clock function without needing to calibrate or update.



Category	Catalog Number	Description	Controller Support
Digital I/O	2080 Digital I/O	4 to 8 Point 24VDC Digital I/O with sink or source outputs – IQ4, OB4, OV4, IQ4OB4, IQ4OV4	Micro810, Micro830, Micro850
	2080-OW4	4-pt 1A Relay Outputs	Micro810, Micro830, Micro850
Analog I/O	2080-IF4	4-ch Analog Input, 0-20mA, 0-10V, non-isolated 12-bit	Micro810, Micro830, Micro850
	2080-IF2	2-ch Analog Input, 0-20mA, 0-10V, non-isolated 12-bit	Micro810, Micro830, Micro850
	2080-OF2	2-ch Analog Output 0-20mA, 0-10V, non-isolated 12-bit	Micro810, Micro830, Micro850
	2080-RTD2	2-ch RTD, non-isolated, 0.5C	Micro810, Micro830, Micro850
Specialty	2080-TC2	2-ch TC, non-isolated, 1C	Micro810, Micro830, Micro850
	2080-TRIMPOT6	6-ch Trimpot Analog Input	Micro810, Micro830, Micro850

Category	Catalog Number	Description	Controller Support
Communications	2080-SERIALISOL	RS232/485 isolated serial port	Micro810, Micro830, Micro850
Backup Memory	2080-MEMBAK-RTC	Memory Backup and High Accuracy RTC	Micro830, Micro850

\*See online catalog for complete listing and availability



# Micro800 PLC Family Overview Specifications

Bulletin 2080	Micro810			Micro830				Micro850	
	12pt	20pt	26pt	10pt	16pt	24pt	48pt	24pt	48pt
Base Unit									
Power Supply	Embedded 120/240 AC and 12/24 DC options via AC and DC Power Supply Modules			Base Unit has embedded 24V DC Power Supply Optional External 120/240V AC, 12V DC/24V AC power supply				Base Unit has embedded 24V DC Power Supply Optional External 120/240V AC, 12V DC/24V AC power supply	
Base Programming Port	Embedded USB 2.0 (non-isolated) Any standard USB printer cable will work Micro810 12pt requires adapter plug			Embedded USB 2.0 (non-isolated) Any standard USB printer cable will work				Embedded USB 2.0 (non-isolated) Any standard USB printer cable will work	
Base Serial Port	None	RS-232/485 non-isolated		RS-232/485 non-isolated				RS-232/485 non-isolated	
Base EtherNet/IP port	None			None				10/100Mbps	
Base unit Plug-In Slots	0	1	2	2	2	3	5	3	5
Base 100KHz Motion Axis or HSC max	No Motion Support			1 Axis/2 HSC		2 Axis/4 HSC	3 Axis/6 HSC	2 Axis/4 HSC	3 Axis/6 HSC
I/O									
Base Digital I/O (In/Out)	12 (8/4)	20 (12/8)	26 (16/10)	10 (6/4)	16 (10/6)	24 (14/10)	48 (28/20)	24 (14/10)	48 (28/20)
Base Analog I/O channels	Four of 24V DC digital inputs can be configured as 0-10V Analog inputs			Via Plug-In Modules				Via Plug-In Modules or with Expansion I/O modules	
Maximum Digital I/O	12	28	42	26	32	48	88	132	
Expansion I/O Modules	None			None				4 modules	
Additional Functions (Plug-In Modules)									
Isolated RS232/485	—	Via Plug-In		Via Plug-In				Via Plug-In	
2/4-ch Analog	—	Via Plug-In		Via Plug-In				Via Plug-In	
RTD/TC	—	Via Plug-In		Via Plug-In				Via Plug-In	
Trim Potentiometer	—	Via Plug-In		Via Plug-In				Via Plug-In	
Back-up Memory Module	—	No		Via Plug-In				Via Plug-In	
High Precision Real-Time Clock	—	Via Plug-In		Via Plug-In				Via Plug-In	
Embedded Real-Time Clock	Yes			No				No	
LCD	Optional 1.5" Local or IP65 3" Remote			Optional IP65 3" Remote				Optional IP65 3" Remote	
Programming									
Software	Connected Components Workbench			Connected Components Workbench				Connected Components Workbench	
Program Steps (or instructions)	2K	4K		4K		10K		10K	
Data (bytes)	4K	8K		8K		20K		20K	
IEC 61131-3 Languages	Ladder Diagram, Function Block, Structured Text			Ladder Diagram, Function Block, Structured Text				Ladder Diagram, Function Block, Structured Text	
User Defined Function Blocks	Yes			Yes				Yes	
Motion Instructions	No			PLCopen Motion Instruction Set Positioning Only (Home, Relative and Absolute Move, etc)				PLCopen Motion Instruction Set Positioning Only (Home, Relative and Absolute Move, etc)	
Floating Point Math	32-bit and 64-bit			32-bit and 64-bit				32-bit and 64-bit	
PID Loop Control	Yes			Yes				Yes	
Recipe Management/Data Log	No			32 KB/64KB only if Recipe is not used		64 KB/128KB only if Recipe is not used		64 KB/128KB only if Recipe is not used	
Run-time download	No			Yes				Yes	
Embedded Serial Port Protocols	N/A	Modbus Master/Slave, ASCII/Binary, DSI		Modbus Master/Slave, ASCII/Binary, DSI				Modbus Master/Slave, ASCII/Binary, DSI	
Environmentals									
Certifications	c-UL-us CL1DIV2, CE, C-Tick			c-UL-us CL1DIV2, CE, Marine, C-Tic					
Temperature Range	0°...55°C			-20°...65°C (supports outdoor RTU applications) Condensation not allowed				-20°...65°C (supports outdoor RTU applications) Condensation not allowed	
Dimensions (HxWxD, mm)	90 x 75 x 60	DC 90x110x60 AC 90x110x90	DC 90x140x60 AC 90x140x90	90 x 100 x 80	90 x 100 x 80	90 x 145 x 80	90 x 230 x 80	90 x 145 x 80	90 x 230 x 80

\*See online catalog for complete specifications

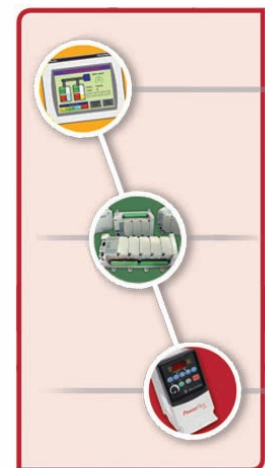
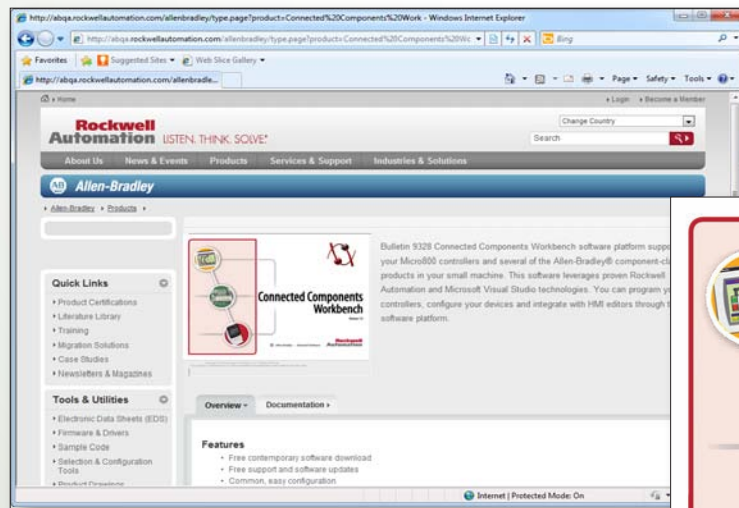
# Connected Components Workbench Software

Connected Components Workbench is a new software platform supporting not only your Micro800 controllers, but Allen-Bradley component-class drives, HMI and motion products in your small machine.

- Based on proven Rockwell Automation and Microsoft Visual Studio technology
- Controller programming, device configurator, and integration with HMI editor

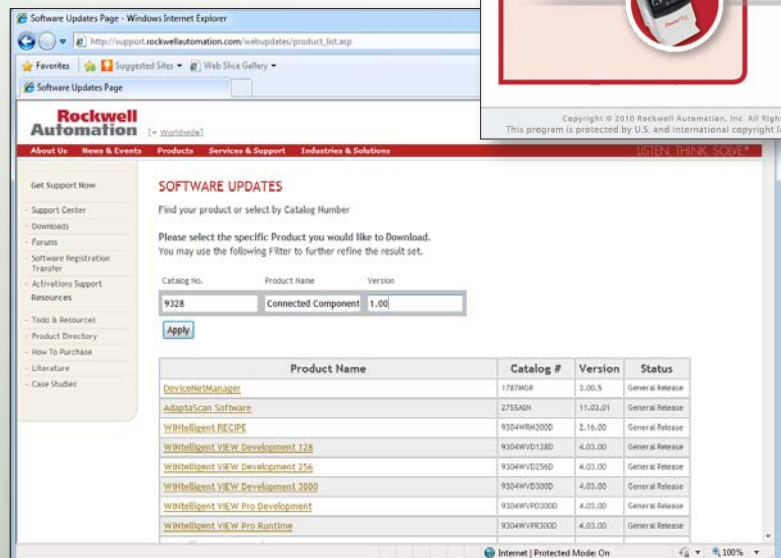
## Easy to Acquire and Install

Free IEC 61131-3 standard software download helps minimize time to start machine development



## Easy to Update

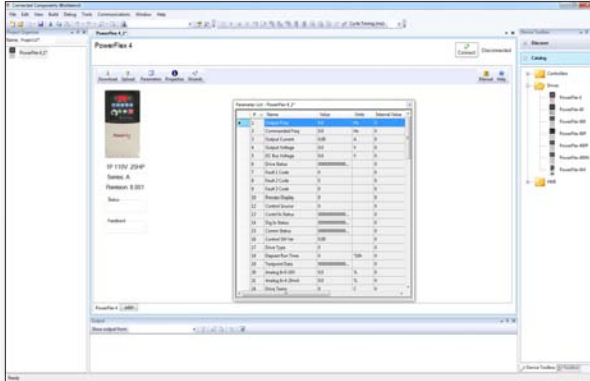
Free standard software updates and limited free support minimize time consuming maintenance work





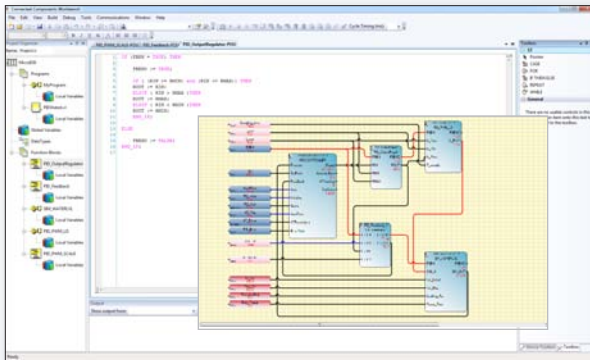


# Connected Components Workbench Software



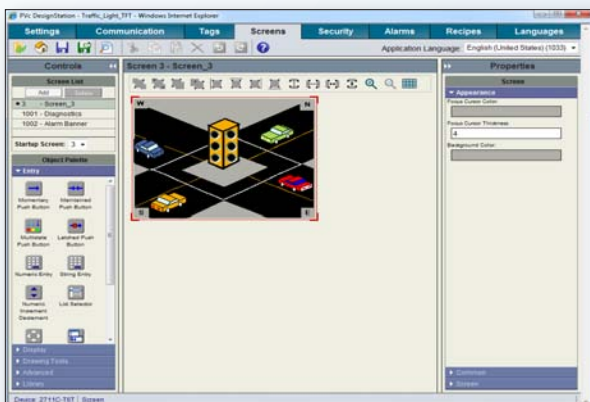
## Device Configuration

- Common environment for:
  - Micro800 controller
  - PowerFlex 4-class drive
  - PanelView Component operator interface
  - Additional connected component products forthcoming
- Simple to install
- Simple connectivity to select devices via standard USB communication
- Graphical controller configuration rather than property dialog(s)



## Programming

- Extensive use of Microsoft and IEC-61131 standards
- Value add through Rockwell Automation and user defined function blocks
- Structured Text, Ladder Diagram and Function Block editors that support symbolic addressing
- Drag and drop of variables between PLC and HMI programming environments for ease of use
- Run-time download allows program changes to be made while machine is running



## Visualization

- PanelView Component software runs within Connected Components Workbench for better user experience
- Connect directly to PanelView Component through USB cable or over Ethernet to program or transfer files
- Features include unicode language switching, alarm messages and history, and basic recipe capability



Specifications	Connected Components Workbench Software	
	Standard	Developer
Controllers Supported	All Micro800 controllers	All Micro800 controllers
Programming languages	Ladder Diagram, Function Block Diagram, Structured Text	Ladder Diagram, Function Block Diagram, Structured Text
User Defined Function Blocks	Edit and Deploy	Edit and deploy
Device configuration	Supported	Supported
Run-time download	Not supported	Supported
Controller simulation	Not supported	Supported
Delivery	Free web download or DVD (9328-S0001A-EN-C)	Orderable Catalog #: 9328-CCWDEVENE

PC Specifications	Connected Components Workbench Software	
	Standard	Developer
Processor	1.6 GHz CPU minimum 2.2 GHz or higher CPU recommended	
OS Supported	Windows XP, Windows Vista and Windows 7	
HD Disk Space required	2.5 GB	
RAM	384 MB minimum 1024 MB recommended	
Optical drives	DVD	
Video requirements	1024 x 768 minimum resolution 1280 x 1024 recommended	



Visit our website for the most up-to-date product information, downloads and tools:  
<http://www.rockwellautomation.com/go/br-micro800>



Rockwell Automation offers a breadth of quality Allen-Bradley® components to fit your specific needs. In order to assist you with your component selection, we offer a variety of configuration and selection tools.



#### **Local Distributor**

Call 1.800.223.3354 to contact your local Distributor today.

<http://www.rockwellautomation.com/distributor/>



#### **On-Line Product Directory**

Our extensive product portfolio is designed to improve your processes through every stage of your manufacturing cycle.

<http://www.rockwellautomation.com/products/>



#### **Product Selection Toolbox**

Our powerful range of product selection and system configuration tools assist you in choosing and applying our products.

<http://www.rockwellautomation.com/en/e-tools/>



#### **Catalogs**

Within our catalogs you'll find an extensive selection of essential Allen-Bradley component products.

<http://www.ab.com/catalogs/>

Allen-Bradley, Connected Components Workbench, Kinetix, Micro800, PanelView and PowerFlex are trademarks of Rockwell Automation, Inc. Trademarks not belonging to Rockwell Automation are property of their respective companies.

Cover machine image courtesy of NJM/CLI Packaging Systems International

**[www.rockwellautomation.com](http://www.rockwellautomation.com)**

#### **Power, Control and Information Solutions Headquarters**

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846