

Motion Control

New Controller Family

FROM ROCKWELL AUTOMATION SUITED FOR SMALL-SIZE APPLICATIONS



The new family of Allen-Bradley Micro800 component-class micro programmable controllers and *Connected Components Workbench* software from Rockwell Automation are designed to give machine builders fully customizable solutions for nano- and micro-level controller applications.

Designed to be used with other Allen-Bradley component class products, such as drives, motion control and operator interface products, the controllers are part of a solution bundle that offers machine builders easy selection, installation and commissioning of their low-cost, stand-alone machines.

“Machine builders need economical, convenient control solutions they can customize to suit their customers’ specific application needs,” said Paul Gieschen, market development director,

Rockwell Automation. “With this new line, Rockwell Automation is delivering the functionality and flexibility of a micro programmable logic controller for the price of a smart relay. Yet, the greatest value of the new Micro800 family is the simplicity and convenience it offers users—namely, that it provides just enough control, so they’re only paying for what they need.”

Suited for standalone machine applications with fewer than 48 I/O, the initial launch consists of two controllers—the Allen-Bradley Micro810 and Micro830 controllers—and *Connected Components Workbench* software. Leveraging the controller’s embedded USB and serial ports, machine builders can quickly program the controllers and link them to human-machine interfaces (HMI) and other serial devices—ultimately helping minimize selection and installation time for themselves, and the total cost of ownership for end users.

The Micro800 controllers offer a wide range of plug-in modules for analog or digital I/O, communications and expanded memory. The plug-in modules enable machine builders to personalize the controllers to increase functionality without expanding the product footprint. The new controller family also offers removable terminal blocks (most models) and simplified communication via point-to-point data exchange.

Complementing the new line of controllers, the new *Connected Components Workbench* software follows established IEC-61131 standards. The software allows machine builders and end users to leverage one platform for their programming and configuration needs. It allows machine builders to program Micro800 controllers and configure other devices in the system, including PowerFlex drives and PanelView Component HMI products.

Based on proven Rockwell Automation and Microsoft Visual Studio technology, the new software provides controller programming, device configuration and data sharing with the HMI editor for PanelView Component operator products. In addition, the software supports three standard IEC program-



ming languages: ladder diagram, function block diagram and structured text. In addition, the programming software features run-time download, which enables live program adjustments.

As the smallest of the Micro800 family, the Micro810 controller features embedded smart relay function blocks that can be configured from a 1.5-inch LCD and keypad. The function blocks include Delay Off/On Timer, Time of Day, Time of Week and Time of Year for applications requiring a programmable timer and lighting control.

The Micro830 controller provides flexible communications and up to six

high-speed counter inputs. It also provides easy incorporation of as many as five plug-in modules on the 48pt models. These off-the-shelf, fully customizable controllers carry global certifications and support.

“Machine builders seek the best of all worlds: They want solutions that are priced to provide not only the essential capabilities that they require, but also feature convenient, easy-to-use programming and configuration tools that minimize set-up and start-up times to maximize their profitability,” said Craig Resnick, research director, ARC Advisory Group. “The Allen-Bradley Micro800 PLCs and

Connected Components Workbench software from Rockwell Automation appear to meet this machine builder demand for a customizable, cost-effective solution suited to standalone applications that require simple, time-efficient installation, configuration, programming and updating tools.”

The Micro810 and Micro830 controllers are available immediately. Additional plug-in capabilities for the controllers will be available later this year.

For more information:

<http://ab.rockwellautomation.com/>

Aerotech's Ensemble Epaq MR Series Controllers

BUILT FOR FLEXIBILITY

The Ensemble Epaq MR is Aerotech's next-generation, stand-alone motion controller for applications from basic laboratory experimentation and general purpose positioning to advanced OEM systems. It is offered in a 4- or 8-axis 3U rack-mount version that contains integrated power supplies and pluggable motor and IO connectors. The integrated PWM or linear amplifiers control DC brush servo, rotary brushless and micro-stepping motors. Higher power external amplifiers may be daisy-chained to the Epaq MR using the high-speed AeroNet serial interface for a total of ten axes of coordinated motion.

The flexibility of the Epaq MR allows users to seamlessly mix and match drive types (linear versus PWM, brush or brushless, stepper, etc.) within the same positioning system using a common programming and control platform. Multiple Epaq MRs can be controlled from one Windows PC through Ethernet or USB. Optional on-board encoder interpolation offers the user programmable axis resolution including the ability to change inter-

polation (multiplication) values through software.

Unlike most controllers on the market today, there is no need to understand a cryptic command set to generate motion—the interface is designed to make programming intuitive and easy. Online help further simplifies writing motion programs and includes many functional examples that can be modified for customer applications. Ease of use is enhanced via built-in libraries for LabVIEW, AeroBASIC, .NET tools for C#, VB.NET, managed C++, as well as a full C library.

The *Ensemble with Integrated Development Environment* software offers a graphical user interface in Windows featuring program editor, variable output window, compiler output window, and task state monitor. This interface enables users to monitor all aspects of their positioning system, no matter how complex. The axis control and diagnostic screens are further supplemented by a fully functional autotuning utility that minimizes startup time and allows easy optimiza-

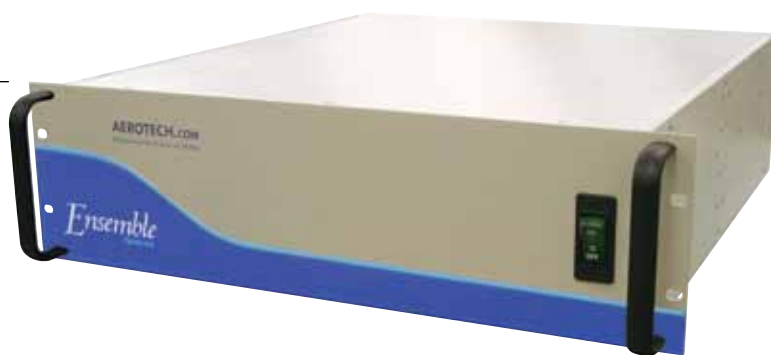
tion of motion axes. The *Windows*-based remote software package is included with each unit, which allows the user to upload/download programs, modify parameter files and analyze motion with Aerotech's advanced graphical tuning package, all from the convenience of a remote PC.

The EtherNet/IP interface enables AB PLCs (MicroLogix, CompactLogix, or ControlLogix) to be integrated directly with the Ensemble. Motion can be programmed in the RSLogix 5000 environment or separate programs can be written on the controller and triggered from the AB PLC.

Aerotech manufactures a wide range of positioning stages, drives and controls to provide a fully integrated and optimized motion solution.

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Lenze

OFFERS ETHERCAT INTERFACE FOR SERVO CONTROL



Lenze's ECS servo system can now be ordered with a clock-synchronized EtherCAT interface. Combined with the new L-force Controller 3200 C for central control architectures, even the most demanding motion tasks in terms of

number of axes and precision required can be solved effectively and economically.

The ECS servo system provides the compact servo drives with high dynamic performance that is necessary for motion tasks with the highest requirements regarding precision and speed. It has been designed specifically for multi-axis applications in central control architectures. The versatile system includes a large selection of axis and power supply modules that can be connected to form an integrated unit. The ECS drives are designed to be matched to the motors in the Lenze MCS range, but can also be combined effectively with other synchronous and asynchronous motors.

The L-force Controller 3200 C has been designed for use in the control cabinet and is based on the energy-efficient Intel Atom processor. The integrated 48 MBit/s backplane bus allows I/O modules from the I/O system 1000 to be

directly side-mounted to the controller. A short cycle time and minimum jitter in combination with a time stamp guarantee that the motion system also complies with the strictest speed and synchronization requirements.

"With our combination of Controller 3200 C and ECS servo system, we offer the optimum solution for tasks with a large proportion of motion," explains Sören Mirbach from Control Technology Product Management at Lenze. "And integration of the ECS in the EtherCAT-based control environment rounds off our uniform, end-to-end portfolio for setting up central control architectures."

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Haydon Kerk

INTRODUCES SIZE-17 PROGRAMMABLE LINEAR ACTUATOR

Haydon Kerk Motion Solutions has broadened its Idea line of programmable linear actuators with a RoHS-compliant, easy-to-use electronic drive and fully programmable control unit integrated with a linear actuator. The compact, versatile unit is suited for equipment or systems that require a small footprint. The Idea platform also has added the capability of communication using an RS-485 data protocol, overcoming the limitations of other drive communication methods and making the RS-485 Idea programmable linear actuator well suited for industrial applications.

The main advantage for using the RS-485 protocol—especially for industrial equipment such as stepper drives, industrial motor drives and servo systems—is the ability for long data transmissions that exhibit excellent immunity to electrical noise. The RS-485 protocol



utilizes "differential" signal lines for limiting common mode noise coupling and twisted pair cabling for canceling out induced noise current. These allow Idea devices to communicate over a 1,000-foot network without the need for termination resistors and to reach up to 256 addressable device nodes. An industrial controller can send commands to all the drives at once or control each drive separately when assigned a unique identifier, a number between 0 and 255. To download the entire *Idea Drive Communications Guide*, visit www.idea-drive.com.

Among the hardware features of the

Idea Drive platform are programmable current control, a single supply voltage of 12 to 48 VDC, 2.6 Arms (3.68 A peak) maximum rated current per phase, and 8 opto-isolated general purpose I/O. The inputs are rated for 5–24 VDC, 4 mA maximum per input. The outputs are open collector, 5–24 VDC, 200 mA maximum per output.

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