

NEWSBYTES

INNOVATIVE PRODUCTS PROCESSES AND APPLICATIONS FOR INDUSTRY



Allen-Bradley Automation Fair '04

Mark your calendars! Allen-Bradley's '04 Automation Fair will be October 27-28 at the Orange County Convention Center in Orlando, Florida. This year's fair features a wide variety of events, sessions, and hands-on opportunities to discover the latest automation solutions to industry challenges.

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McNaughton-McKay: Stronger than Ever

From our earliest inception, McNaughton-McKay has been built upon three basic goals:

- Ensure customers receive the best possible service to meet the demands of their business.
- Meet growing electrical needs with a large, diverse inventory of only the best products available to the industry.
- Create a team environment with people dedicated to outstanding customer support.

The past few years have afforded us an opportunity to reexamine and appreciate where those early ambitions have led us: down a path of excellence. We've adapted to the ever-changing market around us, and revolutionized the supplier-customer relationship. We've expanded our already vast inventories to bring you the best product lines, and we've focused our efforts to continually improve our business model to meet your needs. In our tenth decade of service, we still pride ourselves on being your electrical connection.

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Allen-Bradley Automation Fair '04

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Highlights of the fair will include:

- Over 100 exhibitors
- Twenty hands-on labs in which fair attendees can work directly with Rockwell Automation products
- Forty-nine technical sessions on a variety of industry topics including sessions on "Cost-Justifying your Project," "Lean Design for OEMs," and "Fault Tolerant Solutions"
- Tutorial sessions on topics such as "Practical Process Control with PLCs" and "Factory Talk"
- Business forums addressing issues on doing business in the Asia-Pacific region, working in the entertainment industry, and products and practices that provide increased productivity and growth for industrial and commercial contractors

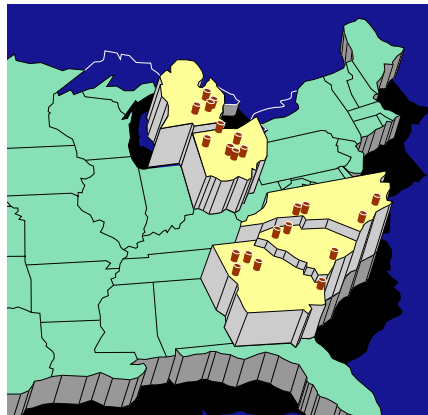
Attendees can also look forward to a number of special events and all of the amenities that Orlando has to offer. For more information on the Allen-Bradley Automation Fair '04, contact McNaughton-McKay.



McNaughton-McKay: Stronger than Ever

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As your needs have evolved, so have we. What began as a small, dusty storefront in 1910 has grown to encompass an array of physical locations, a robust website, and an



E-Sales center, allowing you to review invoices and place orders 24 hours a day, 7 days a week. Our numbers have grown, but our commitment to our customers remains the same. You have access to one of the largest networks of industrial products in the world, but with the convenience of dealing with only one local distributor. McNaughton-McKay not only stocks the highest quality inventory, we also recruit and retain the highest quality people to help you implement and optimize it. Our reputation for excellence in customer service has contributed to our growth across five states and Europe, including a new office in Stuttgart, Germany, which will be providing sales and engineering support for specifications and project coordination to the global automotive community. With specialists across the globe, McNaughton-McKay can share the latest ideas and developments across an immense information network, bringing together the top professionals in the business for innovation and collaboration. Isn't it nice to know they're working to improve *your* business?

Aside from the talent we have in our sales engineers and support people, our decades of experience in the business have also yielded outstanding partnerships with the best vendors and suppliers. We know you have a business to run; you don't have time to shop around and compare features and costs for each purchase you make. From our largest supplier, Rockwell Automation, to our most specialized commodities, we at McNaughton-McKay stock only the highest quality components to make it easy for you to find the right products for any job.



If you have the pieces but need the know-how, McNaughton-McKay has broadened our training and sales coverage on a variety of topics, including the powerful Ethernet/IP network options. We also consult on safety and regulatory issues, whether you need a simple technology upgrade or a full-scale compliance remediation for a legacy system.

If you're in the business of construction, we're in the business of supporting what you need. We stock a vast array of products for the construction trade. Along with our comprehensive inventory, we offer services such as energy audits; lighting and switchgear design recommendations as well as quotations to meet all your construction needs.

Our desire to understand the needs of our customers and our ability to add value to each transaction is the basis for our Customer Alliance Program (CAP). CAP lets you concentrate on your work while we effectively manage your inventory. CAP allows you to tie all your electrical storeroom requirements together in a system tailored to meet your needs. Contact McNaughton-McKay today to find out how you can put CAP to work for you.



McNaughton-McKay Scores Touchdown for Honda of America on Super Bowl Sunday

On Super Bowl Sunday, February 1, 2004, Dirk Rottgen, McNaughton-McKay On-Site Honda representative, received an emergency phone call from Honda of America Mfg., Marysville, Ohio - Auto Paint Department, stating that due to an unforeseen equipment problem Honda needed eight 30 Hp AC motors immediately. Any delay in receiving the motors at the Honda facility would result in the loss of production.

Rottgen immediately notified Bob Huddle, Branch Manager of the McNaughton-McKay Electric Motor Service Branch in Columbus, Ohio, of the Honda situation. Huddle contacted Shop Foreman Randy Hay about the urgent problem that Honda was facing – no small task given the fact that it was Super Bowl Sunday.

Understanding the necessity of meeting Honda's requirements, Hay contacted one of McNaughton-McKay's major motor suppliers with a warehouse in Indianapolis, Indiana. Hay was able to coordinate with them the availability of the motors and delivery within a short



From left to right are: Dirk Rottgen, McNaughton-McKay onsite Sales; Tom Shoupe Honda Marysville, Ohio Plant Manager; Randy Hay, McNaughton-McKay Motor Service Shop Supervisor; and Brian Christensen, McNaughton-McKay Honda Team Leader

time. Approximately three hours after the first phone call from Honda, Hay had the motors on a truck from Indiana to Honda's plant in Marysville. The motors were at the facility by midnight. To ensure that things went as smoothly as possible, Hay stayed in constant contact with Honda.

Even though this was an emergency for Honda, it is standard business

practice for the McNaughton-McKay Motor Service Branch. Going the extra mile for their customers is an everyday routine for them. Because of Randy Hay's hard work and dedication, Honda was able to start their Marysville, Ohio lines on Monday morning with no loss of production.



Managing the Physical Layer of a Network

As a network manager, the realities of providing service to your customers may prevent you from paying attention to the network's physical layer. But new systems and methods may convince you that an investment in physical layer management can pay dividends.

What is the "physical layer?" It includes the cables (both copper and fiber) that route network traffic among the hardware components. As a critical link it also includes the many local patch panels where connections are made, changed, and removed to control end-user access to the network.

Minimizing network downtime—even disruption of network service for a handful of users—is one of your top priorities. The last decade has seen much focus on monitoring and controlling of network software and equipment to keep the network operating. But recent studies have concluded that a significant portion of network outages (up to 80%) are due to problems with the physical layer.

Today only 1% of network physical layers are monitored real-time for faults, yet 100% of the connections in those physical layers are critical to network functions. Why is real-time physical management dispensed within most networks? On the other hand, what are the realities of current physical layer management systems that justify the investment?

One reason that physical layer management has been dispensed with is the perceived lack of financial return on investment. The reality is, however, that there are several areas where you can quickly recoup your investment:

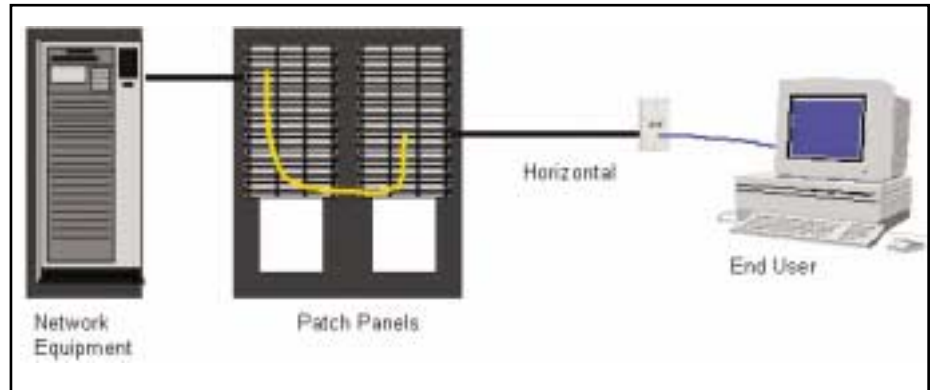


Figure 1

- **Remote Patch Panel Connections:** A system that makes patch panel connections remotely can turn an hours-long job into a task of a few minutes. Recent studies have suggested that remote processing of connections can result in cost savings of up to 87% over present methods.
- **Avoiding Network Downtime:** Physical layer management can significantly reduce the amount of revenue lost due to network outages and related investigations.
- **Optimization of Equipment Ports:** A physical layer monitoring / management system enables you to quickly spot and utilize unused network capacity.
- **Physical Panel Audits and Security Investigations:** Real-time physical layer management lets you ascertain panel connectivity instantly, rather than wait for a physical panel audit. It also equips you to address and reduce security breaches instantly, rather than dealing with the consequences later.

Another reason given for overlooking the physical layer is that other network layers (hardware, software, etc.) have consumed most of the network management resources. In reality, though, as physical connectivity problems arise, it becomes obvious that the health of a network demands that a portion of network management resources be dedicated

to the physical layer. No amount of attention paid to a router, for instance, can find or fix a broken connection in a patch panel.

There has also been the perception that other network features (protection switching, diverse routing, etc.) preclude the need to manage the physical layer. However, the reality is that these network features are chiefly reactive in nature and focus on factors and equipment outside your facility. The personnel administering a network locally find that these features don't address the local issues of cabling and patch panel connectivity.

Current equipment configurations require that a technician physically open a panel to add, remove, or change service for a network user. This process depends entirely on human activity and is subject to human error. Perhaps the technician installs jumpers to a port that no one is using or worse yet removes a connection that is performing a critical data transfer. Even a technician who carries out the work order perfectly may inadvertently cause a problem if the work order is based on out-of-date panel connection records.

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Managing the Physical Layer of a Network

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There is a better way.

The first part of the solution is to ensure that records of connections made in each panel are kept current. Accurate records make it unlikely that a technician will follow a work order to the letter—and still do the wrong thing.

The next step involves a physical layer **monitoring** system that detects patch panel connection changes. (see figure 1) If it is tied into a database that records requested network changes, the system automatically distinguishes between authorized and unauthorized connection changes and alerts network personnel of any unauthorized changes. This enables network personnel to pinpoint and address the problem immediately. Unauthorized changes can also activate security devices, such as cameras, to record the physical conditions and personnel near the panel.

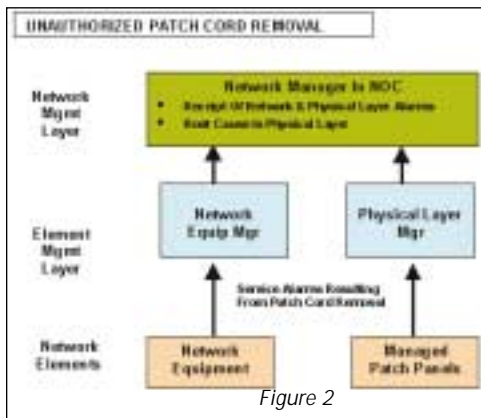


Figure 2

Taking this technology a step further yields physical layer **management**, (see figure 2) in which network personnel have not only real-time monitoring of network connections, but also real-time control. These systems enable remote patching in a given panel, such that the technician need not visit the panel to change a connection. Combined with real-time monitoring for physical disruptions,

these systems represent a tremendous value. Connections can be changed and faults investigated with fewer personnel in the field.

Physical layer monitoring and management also bolster network security. Network personnel can identify and address unauthorized attempts to “hack” into the network while the attempt is happening, not later, after the damage spreads throughout the network.

To a network service provider, the financial payoff may not be immediately obvious, but the educated customer will see the value. While you offer equipment and services that integrate physical layer management, competing vendors may undercut your bid with “comparable” equipment that lacks physical layer management features. By educating your customers about the value of physical layer management, you enable them to make wise choices.

No longer can physical layer management systems be viewed as optional. Critical decisions depend on you having real-time data about the state of your network’s physical layer. Your McNaughton-McKay sales engineer is trained to help you address the physical layer management needs of your network.



Allen-Bradley Beacons and Alarms: Always Monitoring

With all the production noise and activity, the industrial environment can be a difficult place to monitor automated processes. The Allen-Bradley Bulletin 855P Panel Mount Alarms and 855B Round Industrial Beacons provide immediate visual and audible notification of ongoing activity. By communicating machine



status and emergency conditions, the 855P and 855B improve operator and plant floor safety while reducing downtime. The round industrial beacons and panel-mount alarms can operate in the most demanding conditions, including wet, oily, dry, and corrosive environments.

The Allen-Bradley Bulletin 855P Panel Mount Alarms allow users to set sound outputs from 80dB to 105dB at one meter. The 855P also features tone selection and adjustable volume control for increased flexibility. The 855P fits standard 22.5 mm and 30 mm holes and operates on a variety of voltages. Rear-mounted modules virtually eliminate unauthorized product removal.

To keep totally informed about equipment status, combine the 855P Panel Mount Alarm with the 855B Round Industrial Alarm. The 855B Round Industrial Alarm is available in two diameters, 120 mm and 160 mm. The 855B has four illumination options; steady halogen, flashing halogen, strobe halogen, and rotating halogen. In addition the 855B is offered in six colors; red, green, amber, blue, clear, and yellow. All six colors use optically enhanced lenses for the best possible light dispersion.

Combined, the 855P Panel Mount Alarms and the 855B Round Industrial Beacons will communicate. For more light and sound options from Allen-Bradley contact the sales engineers at McNaughton-McKay.



Maintenance as a Business Strategy

Maintenance workers have long held the belief that their work should be more integrated with a company's overall business strategy. It seems that the manufacturing environment has finally started to agree, and maintenance operations are just beginning to feel the change. But while the people closely tied to the work easily see that MRO (Maintenance, Repair, and Operations) activities are crucial business enhancement opportunities and not just necessary overhead expenses, the distinction is not always so clear in other areas of operation. In fact, differing perspectives between the "top floor" and the "shop floor" can lead to significant miscommunication and stalled project pitches.

One of the pitfalls into which maintenance managers often fall while presenting a project or purchase opportunity is focusing too keenly on the technical capabilities of the change. While these features are crucial for the maintenance decisions, other operational areas need to hear how the implementation of the project will affect the overarching business goals. The project proposal should always circle back to basic business drivers. As MRO departments are folded into the larger corporate picture, maintenance managers must speak that larger corporate language.

Before you can accurately communicate the anticipated effects and goals of a project, you first must develop a clear picture of how your maintenance department operates. By clearly documenting day-to-day activities, you'll not only gain a better understanding of the department's strengths and weaknesses, but you'll also gather evidence to illustrate the value of your project. Develop a "roadmap" to describe

the current state of your maintenance operations, where you'd like to see improvements, and how you'll go about achieving those goals. Perhaps your company is ready for a small push toward a more modern maintenance paradigm focused on preventative and predictive maintenance. According to a study performed by Rockwell Automation and *Plant Services* magazine, most maintenance managers felt they were spending too much time on reactive maintenance and not enough on

predictive maintenance. This ratio is also indicative of the slow change in how we approach maintenance operations.

Maintenance used to be a matter of basic loss prevention with budgets growing on an 'as-needed' basis. Now that companies have started to see equipment purchases as investments and maintenance activities as capital asset management, they're more open to finding ways to protect those investments.

Unfortunately, a top-quality maintenance program often gives the illusion that it's not needed. It's difficult to measure the value of maintenance successes such as making on-time deliveries and avoiding downtime. For those who think in dollar signs, a project with heavy initial investments and few well-defined benchmarks for progress is not a promising venture. It is therefore critical that you carefully choose the metrics by which your project will be measured. Simple, straightforward metrics that tie into the overarching business goals will demonstrate the incremental improvements and provide supporting evidence that your project is worthwhile and profitable.

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Maintenance as a Business Strategy

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Sharing your ideas and the projected effects on other business units will gather support for your cause when other business units see how their operations can benefit from your improvements.

By carefully designing project benchmarks and communicating more effectively with other business units, MRO departments can help gather momentum behind the fundamental idea that maintenance operations are not a necessary evil, but a strategic business opportunity.



McNaughton-McKay has the tools, equipment, and know-how to help you implement a maintenance management program that will meet your needs.



Rockwell Automation Adds Two Controllers to the Allen-Bradley CompactLogix Family

Do you need flexible machine control in a compact, space-saving package? Then consider two high-performance controllers from Rockwell Automation added to the Allen-Bradley CompactLogix family. The CompactLogix 1769-L32E provides cost-effective Ethernet/IP connectivity, while the CompactLogix 1769-L31 delivers the necessary functionality for standalone control. Both controllers are perfect for tackling smaller, machine-level applications with the unprecedented power and scalability of the CompactLogix control system.

The CompactLogix 1769-L32E, a scaled-down version of the previously-released 1769-L35E, offers a more economical Ethernet/IP connectivity solution for less complex applications. The L32E controller provides an I/O memory capacity of 750 KB while supporting 16 local I/O modules. That's more than enough for even the most ambitious machine-level control applications, but not so large that it wastes panel space. Removable CompactFlash support enables fast, portable program archival and recovery options, and a potential battery alternative.

In addition, the integrated 10/100 Mbps Ethernet/IP connectivity delivers high-speed data throughput for distributed I/O, HMI, and data collection, making the L32E controller ideal for material handling, high-speed packaging, and

water/wastewater - applications where Ethernet/IP system capability can handle control and cost-effectively meet the demand for plant-wide data sharing.

CompactLogix 1769-L31 brings the next-generation Allen-Bradley Logix platform to a standalone controller, expanding features, power, and performance over the previously released 1769-L30. The L31 offers double the memory, double the speed, and more backplane throughput than the L30. In addition, the 1769-L31 controller provides dual serial ports, which allow users to communicate with two different types of equipment.

The 1769-L31 controller also supports DF1, ASCII, and Modbus master and slave protocols. It is ideal for standalone packaging, oil/gas and municipality SCADA applications, and HVAC building automation.



CompactLogix controllers share a common data model, instruction set, and programming environment with other Logix platforms, making it easy to leverage existing programming and application knowledge and adapt existing programs for CompactLogix controllers, thus reducing training and maintenance costs.

Contact your McNaughton-McKay sales engineer for more information on CompactLogix controllers.



ARE YOU IN COMPLIANCE!

Oberon Arc Flash Protection Complies with NFPA 70E

Arc flash explosions are a safety hazard for anyone performing electrical work. Hazardous flash can occur in any electrical device—including motor control centers, panel boards, and switch boards—in which energy is high enough to sustain an arc. Although arc flashes are of short duration, they can reach temperatures over 14,000°, resulting in first degree burns, permanent blindness, or death.

The National Fire Prevention Association (NFPA) developed standard 70E, Standard for Electrical Safety Requirements for Employee Workplaces, in order to help prevent such injuries. NFPA 70E (copies available at <http://www.nfpa.com/store>) outlines the work practices, procedures, and personal protective equipment necessary to make the workplace safer for workers.

NFPA 70E specifies the use of flash-resistant clothing that meets ASTM F1506, and eye protection that complies with ANSI Z87.1. McNaughton-McKay can help you make your workplace compliant—and safer for electrical workers—with products from Oberon, the pioneer and leader in arc flash personal protection. Oberon has the only product line on the market that fully complies with all aspects of NFPA 70E, as well as ASTM F1506 and ANSI Z87.1.

Offering thermal protection ranging from 15 calories per centimeter squared (cal/cm^2) up to an incredible 100 cal/cm^2 , Oberon's Flashguard line of head and body protective products incorporates the best in fabric and material technologies to help protect the user from the thermal energy of an arc incident. An example is the Flashguard Hood. With a window made of Oberon's proprietary Arc-X energy-absorbing resin and coated on the inner surface with a Permanent Antifog coating, the hood provides the wearer not only with superior arc protection but also with excellent visibility.

Oberon is committed to helping provide a safer workplace for the electrical worker. All the

Flashguard products have been tested for compliance with ASTM F1506, and with every hood, coat, and pair of pants sold, Oberon provides a Certificate of Compliance — a written guarantee that the product meets the electrical safety standards. The products also comply with OSHA 29CFR1910.269 I, 6, iii.

For more information about how you can improve your workplace safety, contact the sales engineers at McNaughton-McKay.



Safety First from McNaughton-McKay and GFS Incorporated

McNaughton-McKay is pleased to offer two products from GFS Incorporated of Kent, Washington. GFS' shock hazard solutions prevent injury and death to personnel, protect valuable equipment, and ensure compliance with OSHA, UL, and NEMA Regulations and Standards.

The GFS Ground Fault Circuit Interrupter (GFCI) provides electrical shock protection and electrical safety for either single-phase or three-phase equipment. It is a listed and complete system. No other components, such as additional sensors and wiring, or engineering are required to provide protection for 240/480 volts; simply plug and play.

Other features include:

- Microprocessor fault analysis to prevent nuisance tripping
- Continuous monitoring for multiple fault conditions
- Fault grounding - current imbalance
- Ground monitoring for ground integrity, excess current, and elevated voltage
- Low-voltage monitoring and protection
- Complete isolation on fault detection
- NEMA 4 enclosure for indoor and outdoor use

Another GFS safety product offered by McNaughton-McKay is the Safe Arc. Most welding machines have 80-95 open circuit volts. This means the welding electrode holder is a live part. Safe Arc reduces any welding machine's open circuit voltage to a safe level of 30 volts or less. Safe Arc is designed to help prevent electrical shock from open circuit voltage, and to bring welding machines within the limitations of live parts guarding.

Think safe, and call McNaughton-McKay.



GuardPLC Family: High Performance Safety Systems

The Allen-Bradley GuardPLC line from Rockwell Automation allows companies to meet safety requirements at lower costs and higher reliability than before. The GuardPLC 1600, Guard PLC 1800, GuardPLC 2000 Safety System, and GuardPLC 1200 Packaged Safety Controller are high-performance Programmable Electronic Systems designed in accordance with IEC 61131, the worldwide standard for programmable controls. All GuardPLC products comply with requirements for Category 4 and SIL 3 safety applications according to EN954 and IEC 61508. They are designed to detect and diagnose failures, and then bring the system to a safe state.

GuardPLC 1600 and Guard PLC 1800 controllers include programming software, and three I/O blocks that bring distributed I/O to safety applications. Placing the I/O closer to the application allows users to have shorter wiring runs. Shorter runs reduce the total cost of a machine and improve its reliability. Shorter runs also make troubleshooting easier.

The GuardPLC 1600 offers 20 digital inputs and 8 digital outputs. The Guard PLC 1800 offers 24 digital inputs and 8 digital outputs, plus 8 analog outputs and 2 high-speed counters. Both models feature integrated four-port Ethernet switches, eliminating the need to purchase, mount, and install extra networking hardware to link the Guard PLCs to their distributed I/O and to each other. The Guard PLCs communicate to their distributed I/O blocks and to each other on Guard PLC Ethernet, a 100Mbit safety-rated network that is the fastest in the industry. By connecting these fast safety controllers



to the fastest safety network in the industry, the system can relay data quickly, therefore reducing the safety distance and improving overall operator efficiency.

GuardPLC 2000 and GuardPLC 1200 typical safety applications include:

- Perimeter guarding for robot and weld cells
- Perimeter guarding for packaging machines
- Entertainment industry (ride control and ski lift control)
- Press control
- Burner management

Benefits of using safety controllers include:

- 24V digital I/O
- RS-232 port of ASCII communication (read only)

- Programmed with RSLogix Guard software
- Certified by Tüv for use in application to SIL 3 according to IEC 61508; EN954-1, Category 4
- I/O self test
- Multiple I/O test points
- Ethernet port for programming and configuration

Sales engineers at McNaughton-McKay will assist you in determining the best GuardPLC safety application for your work place.



Rockwell Automation Expands FLEX Family of I/O Products



The 1794-IB16D and 1794-OB16D digital diagnostic I/O modules, additions to the Allen-Bradley FLEX family of I/O products from Rockwell Automation, provide system designers and end-users with improved diagnostic capabilities, greater design flexibility, and a wider selection of I/O options.

These modules allow control systems users to quickly identify conditions that may result in system failure. Troubleshooting speed and accuracy is improved, resulting in less downtime. They detect open wire, short circuit and reverse polarity of external power. When a fault is detected, the module reports the error to a specified device, such as a human machine interface.

The 1794-IB32 and 1794-OB32P are 32-point I/O modules that provide cost-effective solutions for I/O installations where more than 128 I/O points are required in a single location or panel. For users with a large number of I/O points, these modules save panel space by reducing the number of modules required. The 1794-IB32 is a 24 VDC sink input module, and the 1794-OB32P is a 24 VDC protected source output module.

The 1797-BCNR is a FLEXEx ControlNet coax barrier module that allows users to connect to FLEXEx ControlNet adapters in hazardous areas via coax directly from the safety area without having to convert to fiber media and hubs. This gives users architectural flexibility and a more cost-effective method for using FLEXEx in intermediate point count applications.

Contact the sales engineers at McNaughton-McKay for more information about the Allen-Bradley FLEX I/O modules from Rockwell Automation.



Enhanced Web Server Module for ControlLogix

The Allen-Bradley 1756-EWEB module for ControlLogix controllers supports EtherNet/IP communications and offers a suite of web capabilities that enables users to view plant floor data remotely, without additional software. Using Extensible Markup Language (XML), the module provides for communication with any computer, no matter what the operating system, that has Internet access and a standard web browser.

The 1756-EWEB module serves preformatted and custom web pages, and with a simple e-mail engine, is capable of sending messages to notify users of critical events by e-mail or an e-mail compatible paging system. The use of XML eliminates the need for any middleware in the network.

A valuable feature for OEMs is the capability to create custom web pages that combine control data from the machine level with links to support services, machine documentation, online spare parts order forms, and other information. This enables the ControlLogix controller platforms to be conveniently included in remote monitoring and



diagnostic programs, and the rapidly developing "Device-to-Business" technologies that include such features as automatic calls for service and ordering of spare parts by the machine control system. The evolution of this technology and forecast for its further development is covered in the Rockwell Automation white paper "Reaping the Rewards of a Remote Monitoring and Diagnostics Program" available at <http://www.rockwellautomation.com/services>.

Contact your McNaughton-McKay sales engineer to see how the Allen-Bradley 1756-EWEB module can help you take advantage of web-enabled ControlLogix controller platforms in existing networks and OEM applications.



EtherNet/IP Connectivity on SCANPort-Enabled Drives

The Allen-Bradley 1203-EN1 module from Rockwell Automation allows SCANPort-enabled drive users to upgrade to EtherNet/IP, an open Ethernet-based network for industrial applications. Both new and legacy systems can be controlled, configured, and have data collected over EtherNet/IP. The 1203-EN1 module sends and receives drive operating and metering data, provides parameter read/write access, and offers additional EtherNet/IP features such as web page monitoring and e-mail notification, without investing thousands of dollars in new equipment.



The 1203-EN1 module can serve as a second network to an existing control network. Leave the existing remote I/O system or other network in place and use the EtherNet/IP to provide a separate means for device configuration and data collection. Use the EtherNet/IP to consolidate the networks at a later time.

When used in conjunction with Allen-Bradley DriveExplorer and Drive Tools SP software, 1203-EN1 allows users to configure drives directly over EtherNet/IP. A link on the 1203-EN1 web page launches the desired software tool on the user's PC and automatically connects online with the drive.

The module can be configured via a web page to send a message to user-specified e-mail addresses, including text messages to cell

phones, pagers, and other wireless devices. Notifications can include drive alarms, faults, or reset conditions. Contact the sales engineers at McNaughton-McKay for more information about the Allen-Bradley 1203-EN1 module from Rockwell Automation.



Panduit Delivers Industrial Ethernet to the Plant Floor

Expanding your office communications network to the plant floor can save money and time. Panduit EtherNet/IP can make it happen.



EtherNet/IP delivers real-time access to manufacturing data. Such access can increase plant throughput and reduce inventories. The added ability to track the progress of customer orders can provide visibility to clear bottlenecks.

IT groups are very familiar with Ethernet and its ease-of-configuration and management. The advancements now in place in EtherNet/IP, based in

DeviceNet/ ControlNet Control and Information Protocol (CIP), allow consistent access to PLCs on the plant floor without vendor-specific software. This access will eventually be applied to the actual devices on the plant floor (motor controls, photo eyes, sensors, robots, etc.).

Ethernet's expansion into manufacturing requires the support of robust network hardware and a structured cabling system. More rugged versions of typical office-environment data communications products are being tested and approved with the guidance of organizations such as ODVA and TIA. Hardened industrial switches, such as the Cisco 2955, and IP67 versions of the familiar RJ-45 connector, like the Panduit Industrial TX5e, are designed to withstand the industrial environment. Resistance to harsh conditions such as dust ingress, chemical exposure, washdown, moisture, high temperatures, and vibration is key to a connector's survival on the plant floor.

Cable requirements for EtherNet/IP applications are quite stringent, as well. For example, electromagnetic interference from industrial motor starters can impart high noise to the structured cabling system. High-quality cable, such as Belden Category 5e, is a key component of the Panduit/Belden Integrity Industrial solution.

Another important element of the EtherNet/IP network is protective enclosures for critical hardware. Housing DIN rail-mounted PLCs, switches, and/or patch panels, the enclosures provide IP-rated protection in a compact, lockable design, preventing unauthorized access to network connections.

Gain the benefits of Industrial Ethernet, with McNaughton-McKay and Panduit.



WEB WATCH



Hubbell Lighting

Whether you're a contractor or a distributor, looking for sports lighting or industrial lighting, dealing with big projects or small, your lighting needs are specific. Hubbell Lighting's website meets your needs by offering a tailored experience without limiting the vast array of lighting products available at your fingertips.

Hubbell Lighting's website, located at www.hubbell-ltg.com, features a "My Lighting" link which allows users to personalize the website by adding quick links to commonly visited pages, both inside and outside the Hubbell site. Creating a My Lighting account also allows users to register for literature updates, newsletters, and special offers so that they always have the most up-to-date information.

The Hubbell Lighting website also provides a variety of sales brochures and literature in PDF format for easy downloads and high-quality prints. Installation instructions with wiring diagrams and a Help Desk with customer service and tech support links ensure successful installation and operation of Hubbell Lighting products.

After browsing the specification sheets and sales literature, finding a nearby sales representative is as easy as clicking the Sales Info link. Lists of sales professionals and distributors within the United States and around the globe provide the addresses, phone and fax numbers, and e-mail addresses you'll need to quickly bring high quality lighting products to your work.

The site is well-organized and uncluttered, especially once users take advantage of the customization option. Hubbell Lighting was founded in 1880 but has developed an impressive online presence in the 21st century.



Medium Voltage Smart Motor Controllers

Rockwell Automation offers the medium voltage (MV) SMC-Flex soft-starter in its strong line-up of Allen-Bradley Smart Motor Controllers (SMC). By limiting the starting torque, the MV SMC-Flex reduces mechanical damage to belts, gears, and other machinery, resulting in maintenance savings. The MV SMC-Flex also reduces high inrush currents, helping users meet power company restrictions. Minimizing inrush currents also helps prevent process shutdowns that can occur during power system brownouts.

Additional MV SMC-Flex control features, such as closed-loop current regulation and tachometer feedback, improve performance in applications such as pumps, fans, compressors, conveyors, and blowers.



Features to improve equipment protection and diagnostics include electronic motor overload protection, stall detection, jam detection, ground fault protection, thermistor input, diagnostics and warnings, monitoring, and configurable auxiliary contacts.

User training and spare part costs are reduced as the MV SMC-Flex uses the Allen-Bradley Bulletin 150 SMC-Flex control module, which has numerous control modes for flexible application.

The MV SMC-Flex power ratings allow for a variety of applications with ranges of 200/400/600 amps from 2,400 to 6,900 volts.

For more information on the MV SMC-Flex soft-starter, please contact the sales engineers at McNaughton-McKay.



Smart Choices in Industrial Lighting

A facility's lighting system makes everything inside visible, yet so little attention is paid to it that it almost becomes invisible itself. Take a few minutes to think about your lighting and consider what more it could be doing for you.

For the typical industrial plant, lighting costs account for less than 1% of the cost per square foot. While this may seem insignificant, the quality of lighting can significantly affect what happens in your facility. With some expert advice from McNaughton-McKay, you can probably get more out of your lighting: more efficiency, more safety, more reliability, and more productivity.

Where do you start with plant lighting? What factors enter into choosing the best system for your facility? As with many purchases, value is a prime consideration. Weigh the costs of the system against the features it includes and the performance it gives. There are two expenses that comprise the cost of a lighting system:

- **Owning cost:** the cost to buy and install the fixtures and lamps; includes all materials and labor needed for installation
- **Operating cost:** the cost of energy to operate the system, the cost of replacement lamps, the labor needed for replacement, and the labor needed for system inspection and testing

With an industrial lighting system lasting fifteen or more years, operating costs are by far the more significant. And with energy comprising the majority of the operating cost, the efficiency of the system requires special consideration. Once you've identified systems that meet your requirements, look for the one offering the highest lumens per watt (LPW).



The costs associated with lamp replacement are a factor of the average rated life of the lamps. The longer the average rated life, the lower the costs. In the case of emergency lighting, operating costs include the monthly and annual testing required by law. If you invest in emergency lighting with a self-diagnostic system, costly system testing is eliminated. The system requires only a simple monthly visual inspection.

Look beyond the initial investment in a system and analyze the overall value. Consider, for example, the savings to be realized in so small an item as exit signs. Replacing an exit sign containing fluorescent bulbs with an LED-style fixture will net a 95% reduction in energy costs.

A poorly lit plant doesn't simply need more lights; it needs the right lights. Assembly, processing, and fabrication facilities typically require light for both horizontal and vertical surfaces; this requirement is usually not met by the same lights that perform well in an office or school. If personnel also perform color-critical work, then the color rendering index of a system is of special concern. Lighting that reduces glare while

illuminating critical work surfaces can significantly boost productivity while promoting the well-being of personnel.

Does this sound complex? Let McNaughton-McKay take the mystery out of selecting the right lights. They can provide you with a lighting guide tailored to your specific industry.



Hoffman Adds to Type 1 Free-Standing Enclosure Line



You can't have too much of a truly good thing, and there are more choices than ever available in Hoffman's popular family of large, free-standing A38 and A38D Type 1 enclosures.

Joining the company's one-door model are a two-door, general-purpose enclosure and a line of one- and two-door disconnect enclosures. Hoffman's A38 line offers an affordable way to protect a variety of equipment in locations that don't require sealed enclosures such as commercial buildings and warehouses, assembly areas, electrical/mechanical rooms, or similar clean industrial environments. Hoffman's A38 enclosures are ideal for applications as varied as power distribution, main control, variable frequency drives, custom motor control centers, marshalling cabinets, or lighting control.

Hoffman's expanded selection of A38 models combines rigid, durable construction with modern, clean lines to create a functional and versatile enclosure. Features include integral 10-gauge steel bases, lifting tabs, a hefty 3-point latch with padlock capability, reversible flush doors on non-disconnect models, and a choice of panel or rack mounts to accommodate 19 inch or 23 inch rack equipment. With the addition of gaskets, enclosures may be easily upgraded to Type 2.

Hoffman is the only North American enclosure manufacturer to offer a wide selection of standard sizes and to provide such options as custom sizes and factory-punched holes and cutouts, as well as a full palette of paint colors. The entire line is available immediately. Contact your McNaughton-McKay sales engineer to learn more about how easy and affordable it is to put Hoffman's line of quality A38 enclosures to work for you.



Hoffman Unveils Gold Series Desk Consoles

Hoffman rolled out its latest standard line of desk control consoles at the NA '04 show in Cleveland, Ohio. This product sets the "gold standard" by offering high-quality, custom features at off-the-shelf prices. Hoffman's Gold Series Desk Consoles have something for everyone. Whether you're looking to provide stations for packaging, printing, material handling, machine tooling, injection molding, or food and beverage processing, there are Hoffman Gold Series Desk Consoles to fit your needs.

A total of ten models—nine desk consoles and a 45(wedge-style enclosure—may be ordered from a single part number. Standard features include one-hand top cover operation with a built-in handle and single- or dual-access for greater flexibility and ease in placing and maintaining components. The dual-access models may be easily modified to exactly fit your application by choosing modular internal accessories from a wide variety of quality PROLINE products. As always, Hoffman's exclusive Modification Service options are ready to provide custom features such as holes and cutouts, stud nuts, louvers, or glass panels. In addition, a rainbow of paint colors and a wide choice of finishes are also available to provide the crowning touches necessary to completely integrate Hoffman's Gold Series Consoles into your environment. For an even faster, easier installation take advantage of Hoffman's Assemble-to-Order program and your Gold Series Consoles will arrive fully assembled and ready for use.

Gold is always a great investment. Let your McNaughton-McKay sales engineer show you how you can get in on the amazing value offered by Hoffman's Gold Series Desk Consoles.



Allen-Bradley PowerFlex 70 AC Drives with DriveGuard Safety Solutions

McNaughton-McKay and Rockwell Automation provide added safety features and increased horsepower ratings in the Allen-Bradley PowerFlex 70 line of AC drives.



DriveGuard is a series of safety solutions. The first offering in this series is a "Safe Off" function that helps to prevent a drive from delivering rotational energy to motors by integrating an optional safety board with the power switching signals. Along with a separate dedicated enable input on the base drive, this option provides a certified solution that meets EN954-1, Category 3 (safe-off and protection against restart).

This particular DriveGuard solution, Safe Off, helps users worldwide meet the more exacting safety standards of the Zone Concept. The Zone Concept promotes and regulates safe production areas and allows a portion of the production line to slow or stop for troubleshooting, while the rest of the line remains active.

While no direct equivalent of EN954 currently exists in the United States, the Safe Off feature allows OEMs to build machines that comply with European standards, while helping to increase safety for U.S. manufacturers.

Rockwell Automation product manager, Bill Sinner, says that "Built-in drive safety features are part of an ongoing effort at Rockwell Automation to integrate multiple global standards so our products, and our customers' products, can be sold throughout the world."

In addition to this safety feature for the PowerFlex 70 line of AC drives, Rockwell Automation also announces horsepower ratings up to 30 hp at 480V, giving users broader application versatility. Also available in ratings of 20 hp at 600V and 10

hp at 200/240V, and in NEMA 1, NEMA 4X, and flange enclosure types, the Allen-Bradley PowerFlex 70 AC drive offers a compact package of power, control, and operator interface.

It's designed to meet demands for space, simplicity, and reliability while providing a spectrum of features that allow the user to easily configure the drive for most application needs.

PowerFlex 70 AC drives offer flexible packaging and mounting, along with space-saving hardware features,

such as "Zero Stacking" package styles that can be mounted directly next to one another with no reduction of ambient temperature rating (50° C).

Contact the sales engineers at McNaughton-McKay for more information on the DriveGuard safety solution series and the PowerFlex 70 AC drives.



True RMS Industrial Multimeter Fluke 87 V

Continuous improvement in the Fluke 80 Series multimeters has resulted in the 87 V True RMS Industrial Digital Multimeter with features for maximum productivity. The 87 V has a unique function for accurate voltage and frequency measurements on variable-speed drives and other electrically-noisy equipment, a built-in thermometer that allows temperature readings without an additional instrument, and a large two-level backlit display. It complies with the second edition of ANSI/ISA S82.01 and EN66010-1 CAT IV 600V/CAT III 1000V and can withstand impulses in excess of 8000V, reducing risks related to surges and spikes.

The ability to accurately measure noisy pulse-width modulated AC

voltage at the drive cabinet and at the motor terminals, and accurately measure frequency (motor speed), takes the guesswork out of troubleshooting variable-speed drive systems. The Fluke 87 V display of frequency is directly comparable to the variable-speed drive display, using the selectable low pass filter. Special shielding blocks high-frequency, high-energy noise generated by large drive systems.

The two-level backlit display coupled with the optional magnetic hanger provides for hands-free use in all types of cabinets, under the widest range of lighting conditions.

Fluke 87 V Multimeter key features include:

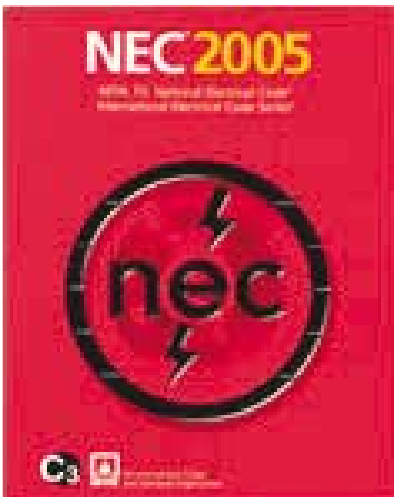
- True RMS AC voltage and current measurement
- Selectable filter for accurate voltage and frequency measurements on variable-speed drives
- 0.05% DC accuracy
- Built-in thermometer with TC probe standard
- Large display digits and two-level bright white backlight
- Min/Max - Average recording with Min/Max Alert to capture variations automatically
- Peak capture to record transients as fast as 250 micro-seconds
- Frequency to 200 kHz
- Resistance, continuity and diode test
- 10,000 micro-Farads capacitance range for components and motor caps
- Externally accessible battery for easy battery changes



The Fluke 87 V Multimeter is an essential tool for the maintenance and troubleshooting motor drives, power distribution, and electro-mechanical equipment. Contact a McNaughton-McKay sales engineer for more information.



Product Literature



2005 NEC Code Book

The NEC Code Book, published by the National Fire Protection Association (NFPA), is updated every three years with additional valuable code information. The 2005 NEC Code Book will be available in September 2004, order now to avoid the rush. The update is available in the following formats:

- Softcover Paperback version of the NEC; text only, no illustrations
- Loose-leaf 7-ringed binder version of the NEC
- CD-ROM Code Book Electronic/CD version of Softcover code book
- Handbook Hardcover illustrated guide to the NEC, with commentary and sample calculations

- CD-ROM Handbook Electronic/CD version of Handbook (illustrated guide)
- Pocket Guide (Residential) Compact guide to select requirements for general residential work
- Pocket Guide (Commercial/Industrial) Compact guide to select requirements for general commercial and industrial work

For an additional fee, tabs are also available for the Softcover, Loose-leaf, and Handbook options.

Contact the sales Representative at McNaughton-McKay for specific pricing and part number information and to place your order for this valuable update.



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Industry types and concentrations vary by geographic region. To best serve customers, each McNaughton-McKay location tailors their inventory and product lines. Thus, not all products discussed in *NewsBytes* are available at all locations.

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