

# NEWSBYTES

INNOVATIVE PRODUCTS PROCESSES AND APPLICATIONS FOR INDUSTRY

## Allen-Bradley Celebrates 100 Years of Quality and Excellence

The year 2003 marks the 100th birthday of the leader in automation technology, Rockwell Automation, Inc.'s Allen-Bradley brand. Rockwell Automation plans to celebrate this milestone with several



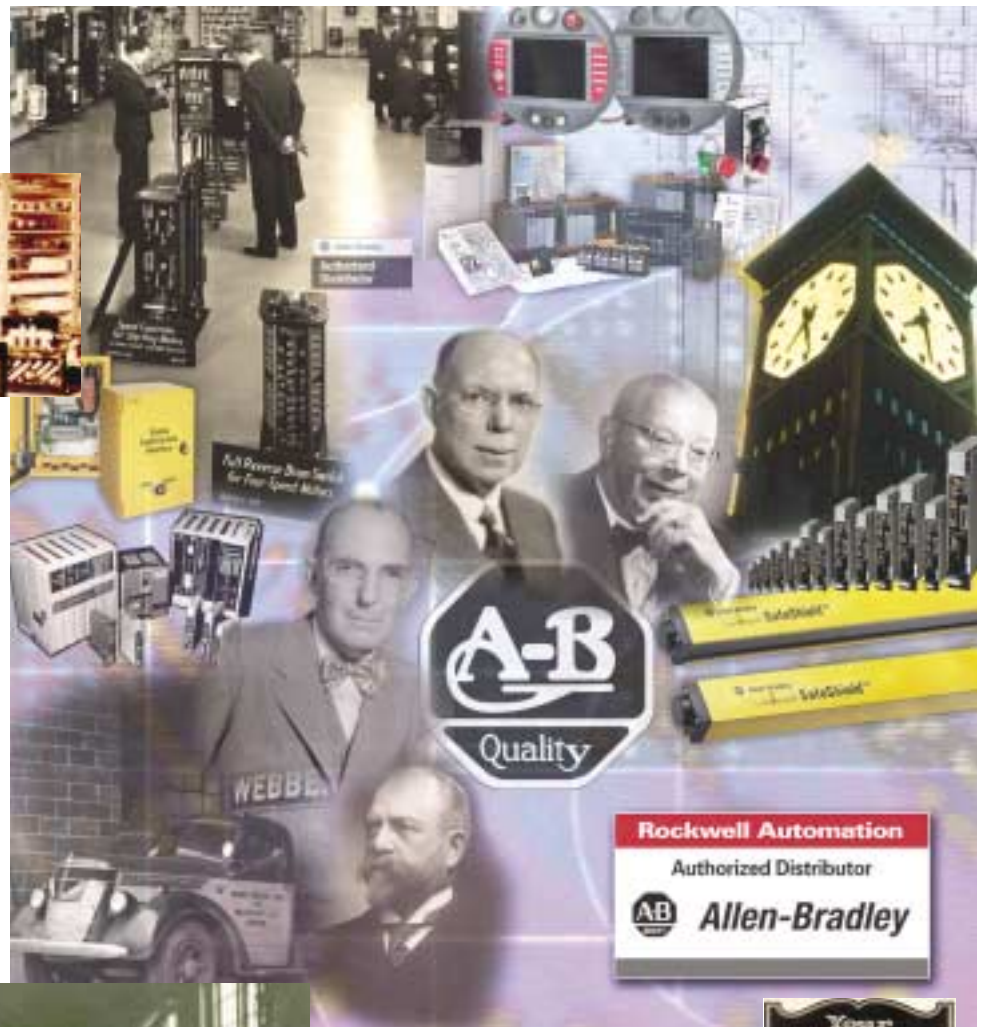
Second Floor Manufacturing

special tributes throughout the year, recognizing the extensive history of the brand and its many contributions to the automation industry.

Allen-Bradley reaching the century mark is a monumental event. The cornerstone of the 100-year celebration will be the annual Automation Fair, to be held in Milwaukee, Wisconsin, November 18-20. Organizers promise that this will be the best show yet, featuring all of the world-class products and services that fuel industry. Mark your calendars for this important event now.

### Allen and Bradley

Allen-Bradley is named after Dr. Stanton Allen and Lynde Bradley. In 1901, at the age of 23, Bradley develops a carbon disk compression type of crane control. In 1903, with financial backing from his friend Dr. Allen, he incorporates the Compression Rheostat Company; Dr. Allen is named president. Lynde Bradley's younger brother Harry joins the firm.



Due to various challenges, in 1909 Lynde Bradley re-establishes the company in Milwaukee, Wisconsin with a new name: Allen-Bradley Company. He is named president.

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Point of Sale Display

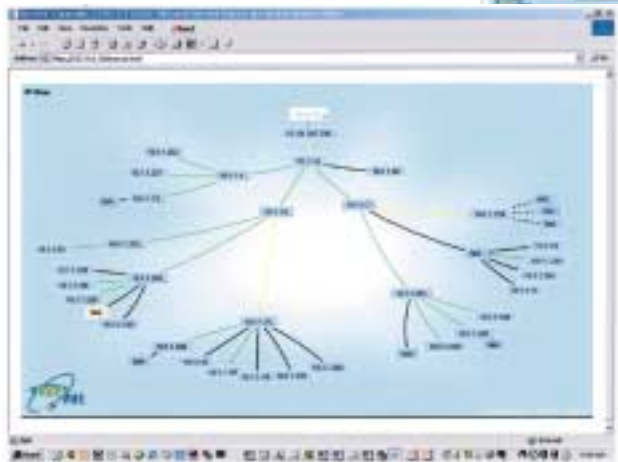
## Network Vision's IntraVUE: When You Can Only Be in One Place at a Time

by Mark Fondl  
Industrial Communications  
Technologies



Answering the need for more connectivity and interoperability is IntraVUE, powerful network and device visualization tools developed by Network Vision Inc. Load this software onto a network computer and you can check on all activities continuously.

Want to be in even more places at one time? Configurable web links can help you click to user manuals, wiring diagrams, operating procedures, or real-time status. IntraVUE is more than a network maintenance tool. With links to HMI and SCADA you have a powerful maintenance and operations system with real-time dynamic process information from established systems.



*Powerful Hyperbolic representation allows a user to view a large complex network on a single screen.*

The easily accessible graphics are the key points of IntraVUE's unique system. Bring up a hyperbolic tree that clearly shows all Ethernet connections conveniently color-coded to indicate their status. Managed devices with connect information show green, yellow, or red to indicate health. Unmanaged lines appear black or red, depending on communication. The entire network can be displayed and navigated on a single screen, no more complex paging structures. One click on any part of the displayed connections will bring you up-to-the-minute information such as connected ports, ping response times, and bandwidth utilization. Just click on any part of the tree that you wish to access and everything you need to know is at your fingertips.

▲ *IntraVUE continuously monitors the network capturing all activities such as Devices added, moved, or removed in addition to network performance.*

Not only can you be in several places at once, you can be there 24/7. IntraVUE was developed to run continuously installed on the network it's monitoring. IntraVUE will keep an event log so you can

check for changes or disturbances and catch potential problems. The system can notify you by alarm-triggered e-mail if a condition occurs. All you need for IntraVUE is Internet Explorer loaded on your computer.

You can't be in all places at the same time. But, with IntraVUE, you can have them at your fingertips. Talk to your McNaughton-McKay sales engineer for more information.



## Rockwell Automation and the SmartSight 9000 DeviceNet Photoelectric Sensor

Rockwell Automation comes through with more smart technology with the SmartSight 9000 DeviceNet Photoelectric Sensor. This sensor is the first "self-teach" sensor available for DeviceNet.



With the push of a button the SmartSight 9000 Photoelectric Sensor will learn the application that is being presented. It is so smart it can even be activated over a network. Additional features include selectable strobing or COS operating modes and a mechanical node address setting. The SmartSight 9000 offers advanced diagnostics such as "dirty lens" notification and advanced logic functions such as on, off, and one-shot time delays.

Contact McNaughton-McKay to get more information on the intelligence of Rockwell Automation's SmartSight 9000 DeviceNet Photoelectric Sensor.



# Allen-Bradley Celebrates 100 Years

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*Clock Tower Circa 1920*

## Bradley and Bradley

The Bradley brothers were instrumental in formulating the products, vision, and culture of Allen-Bradley. Lynde was characterized as serious, methodical, and polite. Employees and retirees described him as “the driving force behind the company...patient, inventive, cooperative, and a good business man with foresight.” Harry, who became board chairman in 1947, has been remembered as very kind and caring, in addition to being a brilliant thinker. Memories further reflecting the character of these important founders may be found in the companion article, “The Bradley Brothers.”



*First Sales Convention*

The colorful history of Allen-Bradley reflects an influential combination of visionary achievements by talented thinkers, while maintaining their



*East Coast Salesmen*

commitment to excellence and relevance to industry needs. Other key dates in their timeline:



*Showroom Floor Circa 1930*

**1925** - Radio craze sends radio component sales soaring; many become industry standards

**1932** - Depression era forces drastic measures; sales fall and employment drops; remaining employees' wages are reduced; Bradley and Lynde form a unique program to replace employees' lost wages with preferred stock, eventually buying back all stock at six percent interest

**1944** - Production peaks; wartime calls for focus on industrial controls for fast, more automated production and electrical components used in military instruments and radios

**1950** - Recognizing the wave of the future, Allen-Bradley opens its first ferrite manufacturing facility to compete in the world of television picture tube creation

**1969** - Allen-Bradley opens its first manufacturing facility in Europe

**1972** - Allen-Bradley enters the drives business by purchasing TPC Drives, Inc.

**1978** - PLC, introduced by Allen-Bradley, begins revolutionizing industrial control

**1979** - DataHighway, the industry's first plant floor network, is introduced

**1985** - Rockwell International purchases Allen-Bradley Company for \$1.651 billion

**1994** - Allen-Bradley introduces DeviceNet, which quickly becomes the industry standard for plant floor networking and software in North America  
**2003** - Allen-Bradley observes 100 years of hard work and fortitude in the automation industry

A more detailed historical perspective may be found at [www.rockwellautomation.com/ab100years](http://www.rockwellautomation.com/ab100years) or [www.ab.com](http://www.ab.com).



*Distributor Sales Training Circa 1940*

So what else does Allen-Bradley have to show after its first 100 years? The continued strength and determination to meet and exceed expectations of quality engineering and product excellence. And, though the world has changed markedly since the issue of the crane controller patent in 1903, Allen-Bradley and Rockwell Automation have continued their service and commitment to the automation industry and to their many satisfied customers around the world.

Please join McNaughton-McKay in congratulating Allen-Bradley for 100 years of quality and excellence!



## The Bradley Brothers

The following, insightful to the character of Lynde and Harry Bradley, are from Allen-Bradley employees and retirees as quoted in the 1991 Allen-Bradley Publication IC-932.

### Lynde Bradley (1878 - 1942)

"...Lynde's office was a large one next to the lab. The door was often open and **he could be seen at this desk**, sometimes with his hat on, because he was deep in

"...He brought a sandwich in a brown paper bag each day and ate it at his desk while making sketches of new ideas. He then took a nap for 30 minutes to an hour during which time his secretary would not allow anyone, including Harry, to disturb him. He put in long hours and was usually at his desk."

### Harry Bradley (1885 - 1965)

"...Harry was always immaculately dressed - complete with his **trademark bow tie.**"

(the poodle) - watch how he comes back to look for me if he doesn't see me coming.' "

"...The next time I saw Harry Bradley was in the new cafeteria serving line. He caught the attention of the woman putting food on the trays. He told her she was serving too little and asked that from now on she double the portions. He then said, '**I want well-fed workers with happy faces.**' "



Lynde Bradley

Harry Bradley

thought. When he arrived, he did not bother to hang it on the hat rack until the problem was recorded or solved."  
"...Lynde was very sensitive, conservative and, one might even say, humble...He was and dressed as a conservative man. **He was proud of Allen-Bradley and the employees.**"

"...**Harry never failed to say hello** to everyone. He also took his dog for walks every day and would pass through the punch press department."  
"...The Bradley **poodle, Mr. Dufy, often preceded Harry** by a bay or two (when walking through the shop). I came upon Harry standing behind a pillar and he quickly explained, 'I'm hiding on him

"...Mr. Bradley's concern for quality was not limited to saleable products. It also extended to such items as sports equipment for the employees. Mr. Bradley's visits to the gym were quite frequent."  
"...Harry Bradley mentioned that the employees were the backbone of the company."





## Allen-Bradley Proximity Sensors for Automotive Applications

Allen-Bradley proximity sensors are as varied in their capabilities as the operations to which they are applied. Whether you need a sensor to mount on a gripper on the assembly line, a sensor for pneumatic cylinders, or a sensor that performs in the presence of large magnetic fields, there is an Allen-Bradley proximity sensor available that excels in your application.

### **871D WorldClamp Sensors**

871D WorldClamp proximity sensors are designed for use on power clamps and grippers in the automotive industry. They incorporate two sensors into one unit, reducing the number of sensors and mating cables by half. Each sensor has two sensing coils, which mount on industry standard clamp cartridges, and are used to detect whether the clamp is open or closed.

The 871D WorldClamp also offers:

- weld-field immunity
- both AC/DC and DC models
- lead lengths of 100 mm, 165 mm and 200 mm
- short-circuit, overload, transient noise, false pulse, and reverse polarity protection

### **871D Cylinder Position Sensors**

871D Cylinder Position proximity sensors are specifically designed for end-of-stroke detection on hydraulic and pneumatic cylinders. Their innovative design allows 304° of rotational

movement of the sensor body, after installation, without breaking the seal. The sensor body is locked into place through the use of one of two setscrews on the sensor mounting frame. This results in faster installations and neater cable runs.

871D Cylinder Position sensors also offer:

- 3-wire DC and 2-wire AC/DC versions
- mini or micro connectors
- six industry-standard probe lengths from 26 mm to 115.8 mm
- long sensing range: 50 mm shielded and 65 mm unshielded
- DIN rail mounting capability
- short-circuit, overload, transient noise, false pulse, and reverse polarity protection

### **871F Flat Pack Sensors**

871F Flat Pack proximity sensors are designed to meet the demands of long-range ferrous and nonferrous metal sensing. This flat pack proximity sensor offers one of the longest sensing distances in the industry. Its increased sensing distance reduces target-to-sensor collisions by allowing the sensor to be mounted at a safer distance from the target area. The sensor's one-piece housing provides superior resistance to the elements, thanks to a redesigned mechanical seal, rugged shroud construction, and full epoxy encapsulation. It also features:

- 2-wire operation
- 2 conductor, 2 terminal, or 3-pin connection

- 20-250V AC/DC
- DIN rail mounting option on quick-disconnect and cable models
- UL listed, c-UL certified, and CE marked for all applicable directives
- short-circuit, overload, transient noise, and false pulse protection

### **871TM All Stainless Steel Sensors**

871TM All Stainless Steel proximity sensors are designed for harsh or extremely demanding environments. This tough and compact sensor resists impact, abrasion, and corrosion - and will keep things moving where ordinary sensors grind to a halt. The 871TM features:

- stainless steel face and threaded stainless steel barrel
- 12, 18, and 30 mm housings
- cable connections and mini, micro, or binder quick disconnect
- 3-wire DC and 2-wire AC/DC versions

### **871ZC Weld-Field Immune Copper Barrel Sensors**

871ZC Weld-Field Immune Copper Barrel Sensors are designed for automotive welding applications and other environments where large magnetic fields are present. Their copper housings with thermoset plastic faces offer a high degree of weld splatter protection. And the rugged copper barrel resists chipping and wear, which helps avoid weld slag accumulation that can cause other sensors to fail. The 871ZC also features:

- 2-wire AC/DC applications
- 12, 18, and 30 mm shielded housings
- mini or micro connectors
- high LED visibility

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### **871Z Weld-Field Immune PTFE-Coated Barrel Sensors**

871Z Weld-Field Immune sensors feature:

- a PTFE-coated housing that resists weld slag
- weld-field immune circuitry for AC/DC and 3-wire DC applications
- immunity to magnetic field strengths exceeding 20,000A at one inch from the welding tip

### **871P VersaCube Sensors**

871P VersaCube proximity sensors offer long range sensing and great application flexibility. In addition, a unique five-way mount makes them easier to mount and adjust than any comparable sensor. The 871P also features:

- sensing ranges up to 40 mm for general purpose models
- sensing ranges up to 25 mm for weld-field immune models
- flexible, five-position sensing face mounting with a single screwdriver
- mini and micro quick disconnect models
- short-circuit, overload, transient noise, false pulse, and reverse polarity protection
- rugged and durable housing

To learn more about putting the Allen-Bradley proximity sensors to work in your automotive applications contact McNaughton-McKay today.



## **AlphaVision PC Windows 2000: Full Graphics Industrial Display**

by **Vernon J. Spaulding**  
**Adaptive Micro Systems Inc.,**  
**Milwaukee, Wisconsin**

Do you require real-time factory production information to be viewed by many employees at once? Look no further than

Adaptive Micro Systems Inc.'s AlphaVision PC Windows 2000, a full graphical LED display. The AlphaVision is an industrially rugged monitor with an embedded PC, utilizing Microsoft Windows 2000 operating system technology. It's available in dozens of sizes ranging from 48 x 48 inches to 10 feet wide x 6 feet tall, or even larger! No matter what your group size, Adaptive has the solution for you.

Another key benefit of the AlphaVision PC Windows 2000 is its software technology...this system can do anything that a PC running Windows 2000 can do! And it lets customers utilize existing HMIs, rather than forcing them to create a new HMI package. All of this allows for more flexible networking possibilities, saving both time and money.



### **Other Features**

- Available in single- or double-sided configurations
- Visual from 1,000 feet away - no washout from factory lighting
- Available in tri-color - red, green, and amber
- Life span of over 90,000 hours

If your production data presentation to employees is critical, consider the AlphaVision PC Windows 2000. Contact a McNaughton-McKay sales engineer today for more information on this remarkable product from Adaptive Micro Systems.



## **PowerFlex 40 AC Drive for Low-Speed Torque Control**



The Allen-Bradley PowerFlex 40 AC drive provides superior low-speed torque control for applications up to ten horsepower, in an easy-to-use and compact package. PowerFlex 40 features sensorless vector control to meet low-speed torque demands, giving you improved application performance and uptime.

The PowerFlex 40 offers OEMs, machine builders, and end users a number of options and features not typically available at the microdrive level, including:

- sensorless vector control, making it ideal for applications, such as incline conveyors, extruders, and constant torque pumps
- highly configurable I/O, including the ability to perform basic logic, timer, and counter functions
- advanced functions, such as PID and flying start
- an integral keypad with the ten most commonly programmed parameters grouped together, for fast and easy startup
- an integral RS485 communications, for users who prefer PC programming
- accommodates internally-mounted communication option cards, such as DeviceNet, making it an ideal choice for applications requiring advanced networking capability
- DIN rail and panel mounting for ease of installation
- zero stacking capability allows drives to be mounted side by side, reducing overall panel space

When complying with electromagnetic compatibility (EMC) requirements, the PowerFlex 40's integral filter for single-phase drives and piggyback mounted external filters for three-phase ratings further reduce the amount of panel space required.

PowerFlex 40 AC drives are available in 115, 230, and 460 volts for applications up to 10 hp (7.5 kW). Like all products within the PowerFlex family of drives, the PowerFlex 40 is designed to meet worldwide power ratings and packaging requirements for out-of-the-box performance.



## DIN Rail Mounted Fiber Optic Photoelectric Sensors

**45FVL Self Teaching Photoelectric Sensors** Rockwell Automation raises the bar with "self-teaching" 45FVL digital fiber optic photoelectric sensors. These DIN rail mounted sensors provide sophisticated part detection, diagnostic, and self-teach capabilities in a 9 mm body that is the smallest in the industry.



The sensor's advanced self-teach function samples and learns from a target to determine its own sensitivity and hysteresis settings for easy and reliable operation. It also has automatic and manual sensitivity adjustments for precision sensing. And to help optimize sensitivity to target color, there are light source options of red, green, blue, and white.

The 45FVL photoelectric sensor is available with a power bus interface that allows users to jumper power across several units to save wiring time. It also features:

- a digital display that clearly shows various operating modes, functions, and diagnostic information
- 40 ms off delay (pulse-stretcher) for high-speed applications
- light/dark operate mode
- built-in protocols to resist cross-talk interference



### **45FSL Photoelectric Sensors, the Standard for Simplicity**

The 45FSL digital fiber optic photoelectric sensor from Rockwell Automation is a simple sensor for sophisticated part detection. Like the 45FVL, it is DIN rail mountable and comes in a slim 9 mm package. It features a 30 ms response time for high-speed applications and provides cross-talk protection for up to eight ganged sensors. The 45FSL sensor also features:

- a power-bus feature to reduce wiring costs
- compatibility with plastic fibers up to 2.2 mm in diameter
- dual high-intensity LEDs for output and stability indication
- choice of visible red or white light source to help sense targets of various colors

McNaughton-McKay and Rockwell Automation will provide you with the right solution for your sensing needs. Call a McNaughton-McKay sales engineer today for more information on our sensing products.



## Rockwell Automation Installed Base Evaluation Equals Value

Is your spare parts room beginning to resemble your grandmother's attic? Let Rockwell Automation's Installed Base Evaluation help you put things in order. An evaluation of your company's installed base of electrical and electronic equipment and spare inventory can add up to significant cost reductions. Rockwell will also look into how you're handling Maintenance, Repair & Operations (MRO) inventory, as well as procedures.



When Rockwell Automation is finished with their evaluation, they'll provide you with a comprehensive analysis identifying product locations and a list of critical, excess and insufficient spares for your equipment.

There are two levels of service offered: **IBE-Basic:** Rockwell looks at your inventory of installed electronic and mechanical equipment, summarizes it, and provides an itemized final report.

**IBE-Comprehensive:** Rockwell engineers compile a comprehensive review and analysis of your installed base, including your stores of Rockwell Automation equipment, applications, and environmental conditions. There will also be a consultation with your electricians and maintenance staff to determine any problems. Rockwell's sophisticated IBE software provides:

- A detailed inventory management report by plant, location, department, line, panel, and catalog number;
- Identification of critical spares, including any excess or insufficiencies;
- An audit of inventory controls; and
- A summary of your current cost of carrying inventory.

Let McNaughton-McKay help clean up your inventory and save you money with Rockwell Automation's Installed Base Evaluation.



## Arc Flash Calculator Available Online

[Bussmann.com](http://Bussmann.com) provides an easy-to-use online program that can assist users in performing a flash-hazard analysis, before a worker approaches exposed electric conductors or circuit parts. A flash-hazard analysis is required by OSHA and NFPA 70E "Standard for Electrical Safety Requirements for Employee Workplaces" in situations where a worker will approach conductors or circuit parts that have not been put in an electrically safe work condition. The Bussmann program can assist in determining the proper flash protection boundary and level of personal protective equipment needed to safeguard against severe burns due to arc flash incidents.



*Simulated arc flash incident*

This valuable software program makes a previously difficult and time-consuming procedure much easier. Bussmann's online program can be quickly accessed:

- (1) connect to [Bussmann.com](http://Bussmann.com)
- (2) select **Electrical Safety** from the left-hand navigation bar
- (3) choose **Arc Flash Calculator**
- (4) enter the three-phase bolted short-circuit current available and the overcurrent protective device ampere rating. The program quickly outputs the incident energy level and flash protection boundary needed for the flash hazard analysis.

The Bussmann arc flash calculator is based on the IEEE 1584 Guide For Performing Arc Flash Calculations (September 2002). The information provided does not address worker protection requirements to guard against the effects of pressure, shrapnel, molten melt spray, or toxic copper vapor resulting from an arc fault. However, it gives the data you need to avoid a potentially serious electrical safety hazard. Go online and check it out today.



## Allen-Bradley Enhanced Zero-Force Touch Button Line

Customers voiced their concerns and Allen-Bradley was listening. The result is customer-driven enhancements that make the Allen-Bradley 800Z Zero-Force Touch Button Series B line increasingly operator-friendly, while offering additional safety and a dose of improved performance.

By using cutting-edge technology, Allen-Bradley supplies a product that improves performance while at the same time provides Category 3 Type IIIB and Category 4 Type IIIC safety ratings. This makes Allen-Bradley the first in the industry to provide this high level of safety for two-handed control applications.

A key safety enhancement is an inter-linked sensor surface. This surface weaves two capacitive sensors in offset planes to provide greater product sensitivity. This sensitivity increases control reliability and allows users to operate the buttons while wearing thick gloves, allowing for wider application possibilities.

Additional enhanced safety features include fault detection and noise immunity. Reliable fault detection alerts the operator to potentially dangerous conditions by shutting itself off before flashing an appropriate fault signal. Noise immunity is achieved by using a combination of pattern-recognition and noise-sensing algorithms; the 800Z Series B line is able to distinguish between true input stimulus and simple disruptive noise. This assures the product will not operate unintentionally. These enhanced safety features are housed in the familiar ergonomically-designed package. The design aids in alleviating the effects of carpal tunnel syndrome and other nerve disorders commonly resulting from repetitive operations. Contact a McNaughton-McKay sales engineer today to get all the details on the customer driven enhancements of the Allen-Bradley Zero-Force Touch Button Series B line.



## Federal Signal Safety Products; Reliable Communications So You Can Rest Easy

Visualize your workplace. If you work in a large manufacturing center, you might see yourself in a cavernous room, with high ceilings, cement floors, and lots of noisy machinery and/or vehicles busy churning away at production. Through your safety goggles, you see a co-worker across the room, 10, 20, or 30 feet away. You need to talk to him, but you can't be heard above the noise. You wave your arms, but he can't see through his goggles or the mist, smoke, and dust. Federal Signal offers an extensive line of signaling devices, from hazardous location strobe lights and two-way intercoms to explosion-proof horns, sirens, and other audible signaling devices.

### Visual Signals

Federal Signal has a wide array of visual signals for all sorts of conditions. Their BPL26 Battery Powered Warning Light is a handy portable device that is great at filling in when primary power isn't available. It runs on two standard 6-volt DC, spring terminal lantern batteries, flashes 65 times per minute, comes in five fresnel dome colors, is impact resistant, and has a convenient steel carrying handle on top.



#### • Hazardous Location

For hazardous locations, Federal Signal has a complete selection of rotating, steady, and strobe lighting that can stand up to the most challenging, corrosive environments. The 225X, 225XST, 225XL, and 224XST Electraray

Hazardous and Supervised Hazardous rotating and strobe light series range from 80 to 90 flashes per minute. The 225XL is an L.E.D. Steady Burn Warning Light that is vibration-resistant. Each comes in your choice of five colors (blue, green, amber, clear, and red - some models also offer magenta). Models vary in power, rotation, flashing or steady lighting, and environmental resistance.



#### • Status Indicators

The line of Status Indicators can notify your workers of the status of a process or machine. The USI UniStat Status Indicator is a unique L.E.D.-based, multi-color, single-high status indicator producing three or four colors from a single L.E.D. array. This product can be programmed to emit signals in four integrated flash patterns: steady-burn, slow flash, strobe flash, and SimuStrobe. SimuStrobe is like a strobe but you can choose a total of 12 possible flash/color combinations in the tri-color models and 16 in the quad-color models. And don't let the small size fool you - the UniStat produces as much light as its much larger competitors.

Federal Signal offers a colorful choice of LiteStak columns (LSB, LSBS, LSL, and LSLD) that provide 360° visibility. As the name suggests, these units are made up of modules of different colors that stack the way you want them. You choose the colors, amount, and voltage that you need. The multiple lens colors can communicate machine shutdown, shortage of materials, supervisor attention, etc. Federal Signal also offers several sound modules that can be added to this series to create an audible/visual signal.



#### • Explosion-Proof

The FB2PSTX, 121X, and 27XST are explosion-proof lights, ideal for use in indoor and outdoor areas such as oilrigs, mines, refineries, and chemical plants. The FB2PSTX model has a self-contained power supply and a choice of mountings. This compact unit produces a "lightning bolt" flash of light. The 121X and 27XST provide rotating and strobe light, respectively. The first is Marine listed and the latter two are Marine rated. These hardy lights are effective for warning of industrial hazards, process control, and status indication or in areas with high ambient noise levels.



#### • Audible/Visual

You won't believe the amount of light and sound that comes out of the petite LP7 unit (3 1/2 x 3 1/4 inches). It combines the features of a mini sounder with a fully-integrated xenon strobe circuit. The unit is available in amber, clear, or red strobe colors. A shallow base is standard but an optional deeper base is

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available. Tone patterns can be switched from "Sweeping" to "Continuous." The 60-flashes-per-minute beacon will operate with any tone you select.

The AV1, on the other hand, has five color choices and three mounting configurations, with a flash rate of 75 times per minute. This solid device comes with a unique twist and lock dome to allow for tool-free access to the incandescent lamp. The integrated buzzer provides 85dB output at 10 feet synchronized to buzz at the same rate as the visual signal. The sound and light from these units are unmistakable.

Federal Signal also has a hybrid signal, the 131C, designed specifically for safety showers and emergency call stations. This unit contains two light sources, a 7,000-hour incandescent lamp and a 10,000-hour strobe tube. The incandescent lamp will burn steady to draw attention to the emergency station while it's receiving power, but if an emergency activation occurs, it will urgently begin to flash. Once again, this unit is available in five colors.

### **Audible Signals**

Federal Signal offers a range of audible signals in electro-mechanical bells, sirens, and horns. These units can be programmed to produce coded blasts or sustained tones. They're perfect for general alarm, start/dismissal, coded paging, and process control signaling in areas where you need to be sure to be heard above the noise.



#### • Electro-Mechanical Horns

The 350 Vibratone Horn uses AC current, has an effective range of 200 feet, and can reproduce coded or sustained tones. It comes with a stainless steel diaphragm.

The 450 Vibratone Horn uses DC current, has an effective range of 200 feet, and can reproduce coded or sustained tones. The 450 comes with an aluminum alloy diaphragm and heavy-duty contacts. The 350WB Vibratone Horn is similar to the 350 in that it runs on AC current, but the 350WB is suitable for indoor/outdoor use, sporting a water- and dust-tight backbox. It features a die-cast zinc housing sealed with a gray enamel finish.



#### • Electro-Mechanical Bells

Federal Signal's Vibratone heavy-duty bell product line comes in three sizes: the A4 is four inches in diameter; the A6 is six inches in diameter; and the A10 is ten inches in diameter. Each produces a different tone and dB output. These bells come in vibrating and single stroke. Vibrating is a continuous ringing sound, and single stroke produces one tone. Single strokes are great for coding and identification. Models 500 and 600 vibrating mechanisms are designed for AC and DC operation, respectively. Each bell comes with a variety of mounting accessories that will adapt to any environment.



### **Intercoms**

Sometimes codes, bells, and lights can't replace the spoken word. Federal Signal has a great line of intercom products that allow reliable verbal communication in noisy environments.

The 310-MV and 310X-MV AudioMaster two-way intercoms offer superior sound quality and reliable communications. These heavy-duty intercoms are ideal for use at oil refineries, petrochemical plants, offshore platforms, pulp and paper mills, water treatment facilities, or anywhere reliable two-way communication is necessary for safety and efficiency. Both come with the ability to activate auxiliary horns or lights by remote. And they're easy to use - just hold down the switch to talk and let go to listen. The housing is dust- and water-tight, NEMA Type 4X. In fact, the only difference is that the 310X-MV is rated for Class I, Division 2, Groups A, B, C, & D; Class II, Division 2, Groups F & G; and Class III.

All Federal Signal products meet or exceed the uncompromising standards of Underwriter Laboratories (UL), the Canadian Standards Association (CSA), and the European Community (CE). You know you can trust them for reliable performance, as well as compliance with the most stringent specifications.

Call the knowledgeable sales engineers at McNaughton-McKay for more information.



## Electrical Safety from Ground Fault Systems, Inc.

by Dennis Robbins  
GFS Incorporated,  
Dent, Washington



Ground Fault Systems (GFS), Inc. offers an industrial Ground Fault Circuit Interrupter (GFCI) to provide continuous electrical shock protection for employees, equipment, and plant wiring, and Safe Arc to provide shock protection from welding machines.

A GFCI works by detecting loss of electrical current in a circuit. When detected, the GFCI turns off the electricity before severe injuries or electrocution can occur. GFS, Inc. offers a listed GFCI that provides electrical shock protection for 208/350/480 volts; a 575 volt unit is available.

The GFCI continuously monitors for fault conditions including current imbalance and ground integrity, ground current, and elevated ground voltage for single- or three-phase equipment. Since the unit is equipped with a micro-processor, unnecessary and annoying tripping is eliminated. Additional features include an isolating disconnect with insulated NEMA 4 enclosure for indoor and outdoor use, primary disconnect with fuses, test and reset buttons, and a response time of just 22ms. It's a complete system – requiring no additional sensors, wiring, or engineering – and as a result, is ready for quick installation.

The Safe Arc by GFS, Inc. reduces the open circuit voltage of welding equipment to below 30 volts—protecting employees from shock. Internal wiring is not required; installation is a breeze. Once attached, the Safe Arc does not change the welding characteristics of the machine but it does provide compliance with or mitigates OSHA, UL, and NEMA regulations and standards.

Avoid a dangerous electrical situation. Contact McNaughton-McKay for Industrial GFCI and Safe Arc devices from GFS, Inc.



## Configurable Power Supply Offered by Sola/Hevi-Duty

Sola/Hevi-Duty has ended the need to search for a cost-effective, flexible alternative to traditional power supply designs. The Sola/Hevi-Duty SMP Series is a line of modular, chassis-mount AC/DC power supplies available with power ratings of 150 to 2500W.

The modular design allows for a multitude of custom and/or unusual configurations. The compact size and low profile of the SMP Series contribute to the flexibility of this non-conventional power supply.

The SMP Series features exceptionally high power density of up to 5.5 cuW and a choice of fixed or adjustable output with voltages from 8.8 to 48V. In addition, these power supplies are optimized for component level applications, making them the perfect choice for automated service equipment, semiconductor fabrication equipment, industrial computers, and electronic test tools. The SMP Series is easy to integrate into more complex systems because of the multiple signal options.

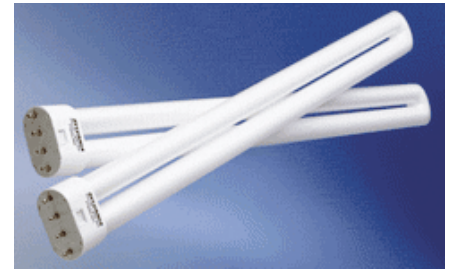


Fan and covers are standard on the SMP Series, as well as incorporated overvoltage and overcurrent protection. They are certified to the relevant UL, CE, and CSA safety standards, and come with a choice of screw terminals or Molex Type connectors.

McNaughton-McKay offers the powerful products of Sola/Hevi-Duty.



## Sylvania 80 Watt DULUX L Compact Fluorescent Lamps



Sylvania expands the popular family of DULUX L, T5 compact fluorescent lamps with the addition of three 80-watt lamps. Offering 6000 initial lumens, these lamps extend the highest light output available from any DULUX L lamp.

Eighty-watt DULUX L lamps can be operated on rapid start and programmed rapid start ballasts. Programmed rapid start ballasts provide coil heat during lamp starting, which is then reduced, thereby improving system productivity and lamp performance in applications that are frequently switched. The 80-watt DULUX L provides 12,000 hours of average rated life, high color rendering of 82 CRI, and the choice of lamp colors including 3000K, 3500K, and 4100K.

With an overall length of 22.5 inches, these 80-watt lamps can fit into a two-foot fixture, as well as indirect fixtures, cove lights, aisle lights, and other industrial luminaires. High CRI and excellent lumen maintenance make them an excellent choice for high ceiling and indirect applications. Any application where high light output, long lamp life, and excellent color are needed, 80-watt DULUX L lamps make the perfect choice.

McNaughton-McKay carries the entire line of Sylvania DULUX L compact fluorescent lamps, including 80-watt DULUX L lamps.





# Construction Solutions

## Cable Tray Manual Addresses Code Issues

The Cooper B-Line 2002 Cable Tray Manual offers general insight into cable tray issues and addresses every point within Article 392 of the 2002 National Electrical Code. Included with this publication is a short introduction briefly outlining the advantages of cable tray systems in today's applications.

Along with a thorough explanation of Article 392, Cooper B-Line's Cable Tray Manual offers helpful information on:

- the advantages of cable trays
- design and installation hints
- properly sizing cable trays per the NEC
- expansion and contraction
- bonding cable trays
- specification checklists
- cable trays as equipment ground conductors



The manual comes complete with illustrations for further understanding of the NEC's requirements and the products that satisfy those necessities. Don't be left in the dark about Article 392 of the 2002

NEC - contact a McNaughton-McKay sales engineer and order your copy of Cooper B-Line's 2002 Cable Tray Manual today.



## Electri-Flex Flexible Electrical Conduit for Repeated Motion Applications

*by Jim McDonough  
McDonough and Associates,  
Canton, Michigan*

The lightweight and extremely flexible Electri-Flex Type CLR Lquatite electrical conduit is ideal for robotics wiring applications requiring continuous flexing. Type CLR is durable enough to withstand repeated flexing - such as that experienced in power track or cable carrier installations - yet features high impact and crush strength, with high chemical resistance.

Type CLR Lquatite flexible electrical conduit is also:

- composed of halogen-free corrugated nylon
- non-toxic
- self-extinguishing
- UL listed
- rated for working temperatures of -50°C to 95°C, intermitting to 150°C
- available in sizes ranging from 5/16 inch to 3 1/2 inch



Electri-Flex Type CLR electrical conduit is part of a complete line of nonmetallic conduit, fittings, adapters, and hardware available at McNaughton-McKay.



# Construction Solutions

## No Installation Tools Required for Bussmann's Globally-Minded Fuseholder

The Optima OPM-NG modular fuseholder from Cooper Bussmann is designed with the global OEM in mind. It incorporates IP-20 finger-safe fusible features that meet international standards for minimizing contact with current-carrying parts. And, the integral DIN rail spring allows for easy installation of the unit, no tools required!

The compact 45 mm design of the OPM-NG fuseholder matches 32A IEC motor circuits. Its low profile handle is part of an integral fuse carrier that acts as a built-in fuse puller, eliminating the need for an extra tool to remove the fuses. In addition, the carriage cannot be removed from the holder, thereby preventing loss of components.

The OPM-NG fuseholder has an auxiliary contact block that provides status indication of the fuse carriage position, and can be used to open the control circuit when a fuse is removed from the fuseholder.

Additional features include:

- a comb-style busbar for faster line side wiring
- single fuseclip design to reduce heat dissipation
- padlocking capability
- dual wire rating
- marking tabs
- acceptance of 10 x 38 or class CC fuses
- UL listed, CSA certified, IEC 60947-3 AC20B
- compliance to the CE directive for European Union low voltage



The OPM-NG fuseholder - made for global applications and available at McNaughton-McKay.



## Optima OPM-NG Wins Plant Engineering Product of the Year Award

The Optima OPM-NG was recently selected as a Product of the Year Award winner. The award is selected by the readers of Plant Engineering Magazine. This prestigious honor recognizes products used by electrical, engineering, and maintenance professionals to increase productivity, maximize efficiency and reduce stress in the workplace.



## Make Your Job Safer and Easier with Brady Labels

Labeling switchboards, panelboards, control panels, and motor control centers is essential to reduce serious injury or death for those who work on or near electrical equipment. Brady's Arc Flash Protection Labels remind workers that a serious hazard exists and help achieve compliance with the 2002 National Electric Code. These clearly visible labels warn of potential electric arc flash hazards, and help workers remember to follow appropriate work practices and to wear appropriate personal protection equipment for specific hazards when examining, adjusting, or servicing equipment.



One particularly useful Brady label is the B-498. It is a semi-gloss white repositionable vinyl cloth, used for wire, cable and general identification. This thermal transfer printable cloth offers crisp, high-resolution printing that comes out dry, eliminating smearing problems. The B-498 is removable and repositionable, allowing you to identify wires before and during assembly, and after termination. Using a pressure-sensitive rubber-based adhesive and a thermal transfer printable topcoat, this vinyl cloth helps to mark your wires and cables with high-quality print and adhesive performance. Ideal uses include:

- Wire and cable marking
- Terminal block applications
- Control panel and component marking
- Quality assurance labeling
- Voice and data equipment labeling
- 100 block marking
- Patch panel identification

Contact us for information about the B-498 label and other quality Brady products.



# Construction Solutions

## Holophane PrismaTron; the Next Generation of HID Ballast Technology

The PrismaTron by Holophane offers reliable electronic HID ballast technology and delivers some long-awaited improvements in energy efficiency. This premium quality, highly engineered ballast system has shown significant improvement in lamp lumen output, providing increased efficiency and considerable cost savings in the long run. This high-performance, energy-saving lighting component is designed to meet even your most challenging lighting applications.

### Studies Prove Increased Efficiency

Studies conducted by Holophane and General Electric HID Product Management have concluded that the PrismaTron electronic ballast reduces lamp lumen depreciation over the life of the lamp when compared to published performance. Because of the improved lamp lumen depreciation, lamp light outputs increase. Compared to published values, conventional metal halide lamps operating on PrismaTron improved mean lamp lumen maintenance from 65 to 75% of initial output; pulse start metal halide lamps operating on PrismaTron improved 75 to 85% of initial output.

### Increased Efficiency = Cost Savings

The ability to dim the PrismaTron ballast up to 50% when full light output is not needed allows for even greater energy savings. Common control devices, such as photocells, wallbox dimming, occupancy sensors, and programmable control systems, provide the ability to customize the lighting system to maximize daylight harvesting and other energy conservation approaches.

The combination of improved lamp lumen depreciation and lower ballast losses results in significant energy savings compared to other lighting systems. Factor in the optional continuous dimming, and energy consumption can be reduced up to an additional 50%. In a typical lighting system, PrismaTron can save 35% a year in energy costs compared to a magnetic ballast system. All of this comes together to make PrismaTron the outstanding choice for many applications.

### PrismaTron Powered Luminaires

**Prismalume Optics:** Producing quality products efficiently and safely requires quality lighting in the work environment. Prismalume reflectors meet this lighting demand by providing an exact combination of horizontal and vertical footcandles, resulting in the required quality lighting needed for work comfort and efficiency. The cost savings that result from good working conditions can be substantial.

Uplight and downlight provide superior vertical illumination for a wide variety of applications including warehouse

**Prismpack V Optics:** Industrial environments are full of airborne particles that can cause luminaires to lose their effectiveness. Prismpack V offers a non-deteriorating prismatic borosilicate glass reflector and a sealed aluminum reflector cover. The smooth inner surface of the reflector has lower dirt depreciation and requires fewer luminaire cleanings. The self-cleaning action of a Prismpack V reflector creates a steady stream of air through the reflector carrying dirt particles out the top.

The unique prismatic glass reflector system provides for maximum efficiency and the option of a wide selection of HID lamps and wattages to offer the best in lighting design for specific application needs. The Prismpack V is covered in a corrosion resistant paint and offers a variety of mounting options, making it even more versatile.

**Enclosed Prismpack V Optics:** Much like the standard Prismpack V, the enclosed version offers the same easy cleanup with borosilicate glass reflectors. This fixture cleans so well, nearly 100% of the initial efficiency is restored with just a simple wipe of a cloth across the reflector and top and bottom surfaces of the tempered glass closure. This ensures



aisle lighting. Gymnasiums, swimming pools, field houses, basketball, volleyball, and tennis courts require a totally illuminated environment - not only for safety, but for comfort and reduced eye strain as well. Prismalume offers uniform vertical illumination, as well as illumination for the playing surface to ensure that all of these aspects are addressed.

that the lighting that was designed remains as pristine as the day it was installed. **CentaGlo Optics:** When designing a lighting plan, several elements must be taken into account, such as the amount of light needed, fixture location, uniformity ratios, uplight, brightness, horizontal and vertical illumination levels, and glare. CentaGlo luminaires are the choice for successful control of all these and more.

◆ Continued from previous page

CentaGlo optic is a combination reflector top and refractor bottom. This combination allows the light to leave the fixture at a high angle, providing great vertical footcandles and uniformity ratios. CentaGlo also offers an upward lighting component to brighten ceilings and reduce shadows. Refractor walls distribute downward light evenly to minimize brightness. A reduced opening eliminates high-angle glare, which can come from direct view of the lamp.

CentaGlo luminaries offer solutions for a wide range of applications, including symmetrical distribution for larger, open areas and an asymmetrical distribution for narrow aisle ways.

**Enduralume V Optics:** When an enclosed fixture is needed to produce efficient, widespread lighting distribution, the Enduralume V fixture is the lucrative choice. This fixture can be installed in a variety of environments from commercial to industrial. The combination of a highly-reflective white painted reflector with a spun-on borosilicate glass or acrylic refractor provides high vertical footcandles. Available in a selection of wattages, this unique fixture provides long life and easy maintenance.

See the Difference for Yourself Superior visibility, energy efficiency, quality, and reliability - see the difference with the Prismatron by Holophane. Contact the sales engineers at McNaughton-McKay for additional information on the next generation of Holophane HID ballast technology. A brighter future could be just a phone call away.



## VersaView Computers and Monitors: Always the Latest!

Do you spend more time searching and reconfiguring your solutions than actually using them? Once again, the people at Rockwell Automation have come to the rescue with their line of Allen-Bradley VersaView industrial computers and monitors.

VersaView products take the worry out of your technology systems. You won't be challenged by keeping up with the latest solutions because the catalog number you select is guaranteed to be the latest industrial solution available. Choose the same number two years later and you'll find it's been upgraded to match the latest in technology.

Are you worried about cost? Check out VersaView. Not only do you get the quality of Allen-Bradley, but these machines are cost-effective and rugged for demanding factories. There's no need to spend time trying to guess what applications you'll need. VersaView Industrial computers and monitors come pre-packaged with the Rockwell Automation software you need for any industrial application.

Here's four more ways VersaView eliminates worry:

- **Visualize:** Your choice of display size available with HMI or standalone applications allows operators to monitor and operate single machines or entire systems.
- **Control:** The Allen-Bradley SoftLogix5800 high-performance control engine makes motion, HMI and information processing all come together in a single solution that lowers total system integration costs and increases productivity. Using VersaView for PC-based control allows for a more diverse range of inputs and



a greater number of supported slots - up to 14 cards - that allow greater customization and connectivity.

- **Information:** Not only does the VersaView analyze production data, each computer comes with Ethernet connectivity that allows you to share the collected information.
- **Maintain:** VersaView industrial computers and monitors are not only rugged on the outside, they're rugged on the inside. The hardware can support a large variety of software applications. This versatility makes it easier to perform maintenance, help troubleshoot or download maintenance and repair documentation.

So don't worry when you need to find an industrial computer system. Let VersaView from Allen-Bradley answer all of your needs. For more information, call your McNaughton-McKay Electric sales engineer



## Metal Stamping Press Control System from Rockwell Automation

The StamPro press control system from Rockwell Automation is designed specifically for mechanical and hydraulic stamping presses, and allows users to control and monitor stamping presses of all types and sizes from one platform. StamPro provides press and automation control, operator interface, and motor controls in a single package.

Currently, many metal forming presses use different control platforms for each press subsystem, forcing press operators and maintenance personnel to be trained on varying technology and user interfaces. StamPro, however, uses the Logix family of controllers from Rockwell Automation as its platform, giving users all the advantages of an open controller platform, including:

- standardized press control components
- open connectivity to other plant floor equipment via Ethernet, DeviceNet, and ControlNet
- information sharing among diverse press lines
- expandability and flexibility to meet process and specification changes
- reduced training and maintenance requirements

Logix-based systems include STFPro, FeederPro, AxisPro, and StamPro, all of which communicate with one another over the open networks and tie together neatly as a total control solution.

StamPro's modular design means it easily integrates with existing press control hardware, and can be configured to meet specific equipment and application requirements. By using RSLogix 5000 programming software, users can customize their applications. In addition, StamPro can be connected throughout a facility, using Rockwell Automation's open NetLinx architecture. Users can download, edit, and upload programs from any open network connection point. StamPro can improve operating efficien-

cy by providing production data that gives users a better understanding of press utilization and production capacity.

StamPro also uses the standard Allen-Bradley 6556 clutch/brake control design with independent, redundant programmable controllers that provide the necessary monitoring, self-testing, security, and verification. This redundancy not only helps reduce costs and injuries; it also helps achieve compliance with industry and government safety regulations.

StamPro is part of Rockwell Automation's Pro-Series line of metal forming solutions, which includes controls for mechanical and hydraulic stamping presses (gap, straight side, transfer) tandem lines, forging, die casting, and motion control applications. Talk to your McNaughton-McKay sales engineer to learn more about our complete offering of metal forming solutions.



## Sola/Hevi-Duty S4K Industrial Online UPS

Interrupted power interrupts productivity. Avoid costly interruptions with Sola/Hevi-Duty's S4K Industrial Online UPS, offering true online (double conversion) protection.

This quality power solution is big on protection and small on size. The S4K can be mounted directly into a standard 19-inch rack while taking only 3.5 inches (2U) of much needed rack height. The unit can also be floor mounted for standalone applications.

The S4K is easily hardwired for a more permanent installation. Simply remove the standard input plug and 120V output receptacles and the conversion is complete. External matching battery cabinets install without effort; simply plug them in. Stringing the batteries together allows for runtimes of up to two hours or more. A two-step battery charger extends battery life and the battery test

feature warns when the hot swappable user-replaceable batteries need to be changed.

How about performance? The S4K Industrial UPS series eliminates a wider range of potential power problems including spikes, surges and extended overvoltage, noise and other transients, sags, and extended brownouts. Even difficult-to-track harmonics and dangerous frequency variations that are common with standby generator operation are no problem for the S4K. Built-in communications allow for maximum configurability and control. The S4K is compatible with most standby generators and the optional communication cards are easily added - allowing connection to almost any type of network.



The S4K Industrial Online UPS, the next generation of 4K UPS units, is from industry leader Sola/Hevi-Duty. Contact McNaughton-McKay for more information.



## Hoffman Watershed Enclosures - The Best Possible Fit

Hoffman, now offers Watershed Enclosures, the best possible fit for stainless steel enclosures in washdown environments.

In a sanitary environment, every aspect of the washdown must be taken into account. You want to ensure the removal of all waste materials and residue from processing systems and controls. Washdowns are highly effectual for blasting away at waste, but, for total safety, you need to be equally sure that the runoff is just as effective.

Cabinet enclosures are often the lowest priority when creating a sanitary environment. This can be a critical oversight because without the proper planning, pooling of water on top of the cabinet and along flat door edges may occur. This provides an ideal location for bacteria to breed and contaminants to accumulate. The surface of cabinets can often be rough, impeding runoff from the washdown solutions.

Employees (equipment operators, mechanics, or others) often leave objects on the handy flat surface as well. Finally, flimsy cabinets often can't handle the high-pressure washdown, and the hardware necessary for latching in a UL 4X environment can be very tricky to work with, resulting in questionable seal integrity.



### What are the Hoffman Solutions?

- For pooling on enclosure top and door edges? A 20° sloped top and door edge facilitates runoff and stops people from leaving objects on top of enclosures.
- For rough cabinetry surface? Stainless Steel smooth #4 finish provides maximum surface runoff.
- For high-pressure washdowns that can exceed 1,000 psi? Hoffman's exclusive, continuous foam-in-place gasket eliminates seams and offers consistent resilience to high-pressure washdowns.
- Difficult to use UL 4X latching hardware? Hoffman's user-friendly UL 4X certified 3-point PowerGlide latches withstand caustic chemicals and allow complete cleaning.

The floor surface per leg occupies less than one square inch of surface space. There's also optional sanitary leg kits to further minimize floor contact and optional 1-inch and 6-inch stainless steel standoff kits to minimize contact area and allow superior washdown access and runoff between the wall and

the enclosure. You can even get the leg kits in fixed or independently-adjustable models to accommodate the sloped floors used in washdown environments.

In the past, if you wanted to adjust for these potential issues, you would be required to develop your own specifications and have your enclosures custom-built; an expensive and time-consuming project. Hoffman's 50 years of experience developing enclosures in the processing and packaging industries eliminates this added cost and effort. The customizing is essentially done; with over 35 standard models available, you can find what you want, when you want, with one-stop shopping via your enclosure partners - McNaughton-McKay.

Hoffman has anticipated all of your needs. McNaughton-McKay stands ready to fill them.





## Rockwell Automation Integrated Software Environment: Simplifying Product Selection

Did you know there is a time-saving tool to help you quickly select and configure Allen-Bradley products? Rockwell Automation Integrated Software Environment (RAISE) configurator eases Allen-Bradley product selection, installation, and programming by providing information in a single location, eliminating the need to search through multiple catalogs.

RAISE is available in a web version with a product configurator, which allows you to order Allen-Bradley products 24-hours a day over the Internet. There is also a standalone version of RAISE, featuring an RFQ Builder to help you with requests for quotes and bills of materials.

If you have a part to validate that was installed 10 years ago and has no available paperwork, RAISE can help you easily validate it. Just find the identification number on the Allen-Bradley nameplate and enter it into the tutorial. RAISE can reverse configure the product and give you the identity of the part, its technical specifications, drawings, and additional documentation.

Guiding you through pull-down menus, RAISE eliminates the need to memorize part numbers. You can configure and select products through a question-and-answer series. If you are an engineer building a system, in the past you may have been confined to paper selection guides. RAISE's graphical view shows options you may not have known existed.

If you need a fast, easy way to choose the best Allen-Bradley automation solution, contact the sales engineers at McNaughton-McKay for more information about RAISE.



## Fluke 1550 MegOhmMeter: Digital Insulation Testing Up to 5000 Volts

by Don Hoffmeyer  
McNaughton-McKay Electric,  
Covington, Georgia

The Fluke 1550 MegOhmMeter is definitely made with the customer in mind. Designed for a wide range of industries, it's a must-have, handy item for industrial electricians, plant maintenance technicians, and commercial electricians. It is ideal for everything from install to ongoing maintenance.

The Fluke 1550 MegOhmMeter, capable of applying test voltages of up to 5000 VDC, is mainly used for testing the insulation resistance of switchgear, motors, generators, and cables to make sure the resistance is very high. This type of testing often occurs when an electrical component is installed or repaired.

It is also used as a valuable tool for preventative maintenance. Over time, insulation can go bad. Overloading and

overheating, vibration, excessive hot or cold temperatures, dirt and oil, chemical contaminants, and moisture can combine forces to take resistive power from insulation. The Fluke 1550 MegOhmMeter can aid in predictive maintenance and help foresee motor failure. By performing a series of measurements, and recording and comparing the results at regular timed intervals, motor failure can be avoided. An internal timer in the 1550 helps perform these much-needed relative measurements during a single test session. This ensures that environmental variables (such as temperature and humidity) are constant, eliminating variables that could throw off the results. Predictive maintenance includes:

- Dielectric Absorption Testing - comparing the ratio of two time-resistance readings
- Polarization Index Testing - the same test taken at one minute and ten minutes, the ten minute reading is then divided by the former for a ratio
- Ramp Voltage Testing - applies an increasing voltage over time and is done in five one-minute increments

Notable features of the Fluke 1550 MegOhmMeter include its ability to measure up to one tera-ohm and a warning voltage function which alerts that voltage is present and provides the voltage reading. The MegOhmMeter tests voltages of 500, 1000, 2500, or 5000. The unit includes high-capacity rechargeable batteries, a mobile charging adapter, and Quicklink 1550 Software and optical interface cable for downloading to a Windows PC.

For more information or to purchase this versatile meter, contact McNaughton-McKay.



## Hoffman Enclosures for Material Handling

When presenting a gift, more often than not, all of the deliberation has gone into choosing the gift itself, not the packaging. Unfortunately, it's this same "after-thought mentality" that frequently makes a good material handling control system enclosure the last decision made. Thank goodness there are Hoffman enclosures for material handling.

Hoffman, the leading manufacturer of industrial enclosures, has over 50 years of experience. They know your needs and have a wide range of products available to meet them. If you can't find it in their standard products, they offer modular or engineered solutions built-to-order. Protecting drives, motor starters, PLCs, distributed I/O, terminal blocks, cables and wire, operator interfaces, computer workstation equipment, vision system products, and pushbuttons is what they do.

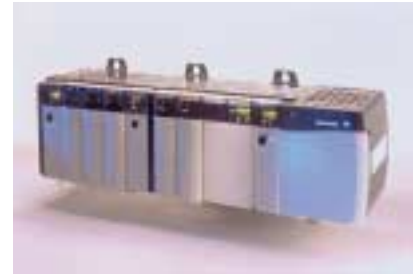
Take advantage of Hoffman's expertise; they're pioneers of research and implementation. They offer free Thermal Management Sizing and Selection Software that can help you design your cabinets with necessary heat dissipation to ensure protection of your electronics.

They can offer a solution to any requirement you may have. Consider:

- Hoffman offers over 8,500 standard products, including over 400 wall-mount sizes.
- Your choice of materials in mild steel, 304 and 316 stainless steel, fiberglass, polycarbonate, or aluminum.
- Mounting options include DIN rail, enclosure/panel, and backplane.
- Thermal management systems to protect the life and performance of today's smaller hardware and higher-density electronics.
- Enclosures built and tested for demanding environments such as seismic and vibration, heat and cold extremes, moisture, corrosion, and EMI/RFI.
- Subpanels, light kits, and many other accessories to provide complete enclosure systems.

Hoffman builds to the highest standards. They're the only company with their own in-house UL-certified test lab to facilitate compliance with all relevant standards, including UL, CSA, NEMA, CE, and IEC classifications. Choosing Hoffman to be the source for your material handling needs is a good choice. Building you the best possible package is their gift to you. For more information call the knowledgeable sales engineers at McNaughton-McKay.

## ProcessLogix Release 500 with DeviceNet Network Access



Allen-Bradley's ProcessLogix distributed process control system provides the flexibility to connect to an array of industrial networks, including: DeviceNet, EtherNet/IP, ControlNet, and FOUNDATION Fieldbus devices. With all of this connectivity capability, ProcessLogix allows users to easily connect a wide range of existing ODVA compliant plant floor devices into their system.

ProcessLogix Release 500 with DeviceNet access supports Rockwell Automation's NetLinx open network architecture. NetLinx provides a range of networking features shared across EtherNet/IP, ControlNet, and DeviceNet. It offers seamless routing from one network to another, without additional programming - making the installation and/or building of multi-network systems much easier. It simplifies configuration and data collection as well.

ProcessLogix Release 500 is also OPC 1.0 Alarm and Event compliant, allowing OPC alarm and event users to access data originating from ProcessLogix. Users can easily integrate plant floor data with higher-level manufacturing applications via the open OPC protocol.

ProcessLogix Release 500 distributed process control system gives you greater flexibility and access to a broad range of devices for both monitoring and distributed control. Talk with the experts at McNaughton-McKay to learn more.



## Identifying, Addressing, and Reducing Machine Tool Risks

You'd think that the sound and vibration from stamping press tonnage slamming down would serve as a constant reminder of the danger. Yet, the formidable sound and vibration are routine. Thus, the people who work around them day in and out learn to ignore what cautions the casual observer to stay back.

Hazards, obvious or subtle, are inherent wherever metal is bent, shaped, cut, or formed. We all recognize that zero risk does not exist in any practical sense, however, reducing risk to a tolerable level is an achievable goal. The ANSI B11.TR3-2000 technical report is a guide that provides a practical approach to identifying hazards and assessing the risk associated with them. The report represents a major shift in this arena because it includes everyone involved in the risk analysis process - from the suppliers who engineered the equipment to the people on the shop floor using it daily.

The genesis of this approach was the recognition that trying to control a hazard without estimating the associated risk was out of step with the real world and, any attempt to identify hazards without first looking at each task would surely result in missing potential hazards. ANSI B11.TR3-2000 also recognizes that everyone needs to take responsibility for risk assessment and reduction. Another concern prompting the need for this report was to ensure that implemented protective measures were appropriate for the risk - too much or too little safeguarding can result in a waste of resource or effort.

B11.TR3-2000 provides a basis for meeting risk reduction practices consistent with European and other international standards. It also supplies a methodology for not only determining the level of risk a task might have, but also providing a guideline for appropriate action. Finally, it specifically addresses machine tool risks and hazards (although the methodology may be applied in other industries).

Key in the development was the need to keep the standard simple and easy-to-use for everyone involved in the process. In so doing, the result was a consistent method of risk estimation based on a clear set of criteria. An added benefit is that the standard follows the general format and uses terminology similar to European standards.

So, how does it work? First, it recognizes that hazards can be identified best by analyzing the tasks associated with the machine tool. Hazards can then be classified, using the worst credible injury that could occur from a given task. Finally, the risk for a given hazard can be determined by estimating the severity of the hazard and the likelihood that the hazard will occur. The goal then is to reduce the likelihood, the severity, or both if possible, of the hazardous event.

The steps necessary for implementation would be:

1. Review the machine limits
2. Identify all the tasks to be performed for the life cycle of the machine
3. Note the hazards associated with the tasks and rate their severity
4. Assign the probability of the hazard occurring
5. Determine the level of risk (low, medium, high) and whether such a level is tolerable
6. Eliminate the hazard or reduce the severity
7. Determine the appropriate protective measures

Whether driven by cost (productivity, liability, lost work), mandate, or philosophy; reducing risk in the workplace is a desirable goal. ANSI B11.TR3-2000 offers a practical methodology (complete with charts and worksheets) for achieving such a goal.

Once you've identified and assessed the hazards, there's still work to be done. Fortunately, the safety experts at McNaughton-McKay can help you determine appropriate methods and devices for addressing them, from light curtains to sensors to re-engineering. We are here to work with you, and have the tools and knowledge to help you address the potential hazards.

## Automation Fair 2003 Sharing a Century of Knowledge, Saluting a Century of Quality

by *David Sitko*  
*McNaughton-McKay Electric,*  
*Madison Heights, Michigan*

Join us to help celebrate the 100th anniversary of the Allen-Bradley brand at the Rockwell Automation/Allen-Bradley Automation Fair 2003 held November 18-20, 2003 at the Milwaukee Midwest Airlines Center in Milwaukee, Wisconsin. Plan to attend this Rockwell Automation premiere educational and centennial milestone event.

At the Fair, you can participate in numerous Hands-On Training Labs and Technical and Tutorial sessions covering all the latest products and technologies. Meet with the Rockwell Automation Product Engineers and over one hundred Encompass Partner manufacturers displaying Product Capability and Solution Exhibitions.

McNaughton-McKay Electric Co. will provide convenient travel and hotel packages for our customers to purchase, in order to simplify the logistics required to attend the Rockwell Automation/Allen-Bradley Automation Fair 2003. More information on the travel packages will be available soon.

Contact your McNaughton-McKay Electric salesperson for more information.

# POWER QUALITY



## Hospital and Healthcare Providers Are Focus of McNaughton-McKay's Power Quality and Reliability Seminar 2003

by Dennis M. Ferguson  
McNaughton-McKay Electric,  
Madison Heights, Michigan

The McNaughton-McKay Madison Heights Power Quality and Reliability Seminar is an annual event that focuses on a specific industry and its power requirements. This year the seminar was held at the Madison Heights facility on January 28 and 29 for healthcare facility managers and engineers, IT management, consulting engineers and hospital building contractors.

Power disturbances cost U.S. businesses in excess of \$150 billion per year in lost productivity, according to a Sandia National Labs study. This year's seminar attendees gained a better understanding of power systems and the impact power quality has on a health facility's safety, diagnostic image quality, equipment availability, maintenance, energy savings, and overall profitability. Presenters provided healthcare-specific technical information and solutions, as well as product exhibitions. By the end of the day, seminar attendees had the information and resources they needed

to better cost-justify the use of power quality and reliability equipment in their healthcare facilities.

Seminar presenters included GE Medical Systems, Thermoweld, Hubbell, MGE, Burndy, Oneac, DTE Energy, Spectrum Strategies, Soft Switching Technologies, CIPro, Tech ESA, Powersmiths, and McNaughton-McKay.

Seminar sponsors included SE Michigan Society for Healthcare Engineering, William Beaumont Hospital Corporation and Beaumont Services Company,

Albert Kahn Associates, GE Medical Systems and RDK Power Systems.

The McNaughton-McKay Power Quality and Reliability Seminar is an informative event that can provide real solutions to problems associated with power disturbances. Watch for next year's seminar in mid-February of 2004.



## RSView Software Helps Meet the Challenges of Federal Compliance

Companies that use electronic documentation as a standard method of managing information are challenged to comply with federal regulations that govern their industry, including authentication, electronic signatures, auditing, and archiving. Rockwell Automation's RSView Supervisory Edition equips you with the features you need to comply with the regulations already in place, and, as requirements change, to help you continue to meet the challenges of compliance.

Version 2.10 of Rockwell Software RSView human machine interface (HMI) software is designed to help companies meet regulatory compliance requirements (such as 21 CFR Part 11) through enhanced documentation of electronic signatures and enhanced information security.

### Authentication Requirements

To meet authentication requirements, the RSView Supervisory Edition user log-in can prevent users from altering values or issuing commands. The user log-in triggers proper security controls for each user, limiting access to application functions based on individual security levels. The software uses Windows network domain security, and includes automatic user log-out after a period of inactivity, as well as a desk-lock feature. RSView Supervisory Edition servers run as services that do not require users to be logged in. Operator interaction only takes place at the client locations, thus limiting operator access only to the areas necessary.

RSView Supervisory Edition version 2.10 also offers enhanced electronic signature and authorization functions for critical operations. When using the HMI, users can be prompted to enter electronic signatures and/or obtain verification from a supervisor before making changes or issuing commands.



### Audit Trails

Some regulations require that manufacturers provide audit trails. RSView Supervisory Edition Version 2.10 offers secure, centralized information for running audit trails and reports. Local information logs can be used to log computer-specific information in a closed format that is not changeable, and is only viewable in the HMI. In addition, information can be logged to a secure application-wide central ODBC database.

RSView Supervisory Edition HMI software gives you the tools you need to meet federal requirements for 21 CFR Part 11 and similar regulations. With support for Microsoft Windows XP, enhanced documentation of electronic signatures, and enhanced information security, RSView Supervisory Edition Version 2.10 will help you address your compliance issues. Call your McNaughton-McKay sales engineer to learn more about this valuable HMI software.



## Maintenance and Reliability Practices Survey

Last year, Rockwell Automation partnered with Maintenance Technology magazine and surveyed over 200 maintenance supervisors and managers at manufacturing and industrial companies nationwide. If you've ever thought "I wish our maintenance group had the (pick one) money, time, personnel to do it right", you're not alone. Those are common themes. Most maintenance professionals realize that condition-based/predictive maintenance can increase system uptime...but 53% of respondents say they don't have the

folks to accomplish it; 47% cited budgetary issues as the primary factor keeping them from being proactive. The result is a rueful statistic: 40% of maintenance activities are reactive.

Other interesting statistics from the 2002 Maintenance and Reliability Practices Survey include:

- Outsourcing has not yet gained wide acceptance, although instrument maintenance is outsourced approximately a quarter of the time, followed by equipment repair (18%) and reliability analysis (15%). The reasons for outsourcing are typically because of limited personnel or limited skills and experience.
- The three most important issues currently facing maintenance? Health and safety, equipment reliability, and improving uptime.
- In the ideal world, maintenance managers want to allocate available personnel resources toward implementing routine/preventive maintenance (44%) and condition-based/predictive activities (33%).

Maintenance challenges are universal; solving them can be quite profitable. As discussed in a recent issue of **NewsBytes**, companies looking to improve the bottom line should consider Rockwell Automation's "Asset Management" as a way to improve efficiency. Production machinery, tooling, and spare parts are major assets of manufacturers, so maintenance, repair, and operations (MRO) are at the heart of most asset management initiatives. In the United States alone, the annual cost of materials for MRO is estimated at \$300 billion; ineffective management of these assets costs billions of dollars annually. The usual problems are inefficient storeroom and inventory practices, uncoordinated purchasing, failure to implement preventive or predictive maintenance, and ineffective training. McNaughton-McKay, partnering with Rockwell Automation, understands these issues and has developed solutions to these and other asset management problems. Contact us today.



## Smart Motor Controller - SMC-Flex Sometimes, Less is More

In the SMC-Flex from Rockwell Automation, the key word is "reduction".

That's right, reduction in size, heat loss, enclosure space, and damage - for the SMC-Flex means more flexibility, integrated features, and technology previously unavailable in a softstarter.



Less is more with the SMC-Flex. First, you notice the 50% size **reduction**. Less size equals more efficiency, resulting in a **reduction** in heat loss of 80%. Because the bypass automatically closes when the motor reaches its nominal speed, there's a cooler-running component and **reduction** in enclosure size. Do you have applications where motor starting torque needs to be **reduced** to prevent damage and costly downtime? SMC-Flex is the perfect solution. It also **reduces** motor starting currents and voltages to prevent power system disturbances associated with full voltage starting methods. There's even a built-in motor protection with multiple overload classes to reduce the number of devices required to meet demanding application requirements.

Other SMC-Flex features include:

- available in current ranges from 108-480 amperes
- 200-600 Volts AC
- built-in line monitoring capabilities allow for monitoring of three-phase voltage, current, kilowatts, and system power factor, taking the mystery out of the motor's operation.

Contact McNaughton-McKay to check out the SMC-Flex; its functionality and application capabilities are unmatched in the industry.



## Allen-Bradley Rotary Disconnects Comply to NFPA 79 Changes

Don't worry about having to purchase all new equipment to meet the latest NFPA Code. Rockwell Automation is offering two cost-effective solutions for the Allen-Bradley Bulletin 194R Fused and Non-Fused Rotary Disconnects. These solutions meet with the NFPA 79 code changes in both the popular front- and side-mount designs. These changes were effective November 2002. The updated code requires rotary switches to be operable without the use of accessory tools or devices (independent of door position). It also includes an interlocking provision to prevent the closing of disconnects while the enclosure door is open, unless an interlock is operated by a deliberate action.

Rockwell Automation has developed two styles that satisfy both the code and customer preference. The front-mount with internal handle uses a kit that assembles directly to the 194R disconnect switch. Just like before, the handle shaft is cut to size and the securing pin is inserted. That's all that's required. The handle kit is also offered for field installation on existing applications.



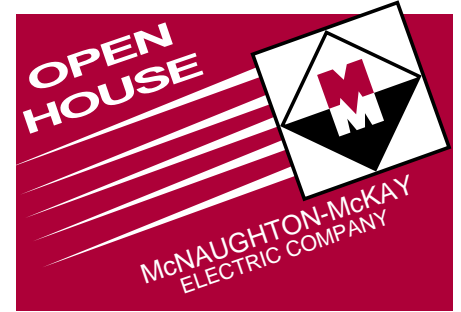
If you prefer the side-handle applications there's a bracketed design of the side-mount that installs to the enclosure. The handle attaches as before, but now is operable with side-actuation.

Rockwell Automation has always been world-class at helping customers meet compliance issues; they've done it again. For more information contact the sales engineers at McNaughton-McKay.



## Greenville, South Carolina to Host Open House

by Cindy Cline  
McNaughton-McKay Electric  
Greenville, South Carolina



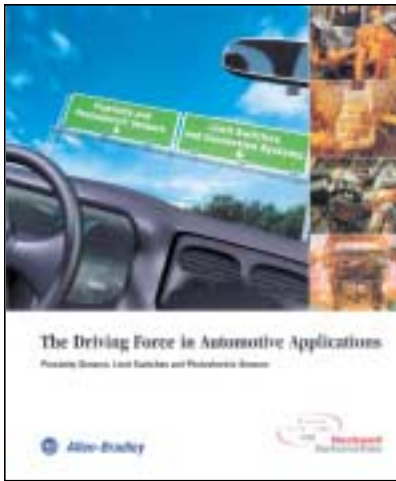
Please join the McNaughton-McKay South Carolina team in Greenville on Thursday, May 1st from 4 p.m. until 8 p.m. for our Open House. You'll be treated to food and beverages at a barbecue buffet. Plenty of great gifts and door prizes will be given away during the event.

The Open House promises to be fun and informative. Many of our quality manufacturers will be on hand to share knowledge about products that may help your application. And you'll be able to see the latest product developments in action.

The whole Greenville staff looks forward to seeing you on Thursday, May 1st. So please, come on down to win some great prizes, eat delicious food, meet some wonderful people, and go home with knowledge about how our team can help you. You might even take home a gift!

Visit [www.mc-mc.com/SCOpenHouse.asp](http://www.mc-mc.com/SCOpenHouse.asp) to pre-register or for further details.





## Allen-Bradley

Proximity Sensors, Limit Switches and Photoelectric Sensors from Allen-Bradley are the driving force in automotive applications. This brochure showcases the complete line of proximity sensors and limit switches designed with automotive applications in mind; see the related article on page 5. Call your local McNaughton-McKay representative to find out how to put these products to work for you today.



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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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