

# NEWSBYTES

INNOVATIVE PRODUCTS PROCESSES AND APPLICATIONS FOR INDUSTRY

## ROCKWELL AUTOMATION ALLEN-BRADLEY AUTOMATION FAIR 05 ST. LOUIS

### Rockwell Automation Sampling of New Products and Services at Automation Fair 2005

The annual fair, held November 16-17 in St. Louis, Missouri, sponsored by Rockwell Automation, was an exciting educational opportunity for professionals looking to optimize production, as well as a setting for the unveiling of new automation products, integrated control and information architectures, and value-added services and solutions.



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### McNaughton-McKay's Vision and Traceability Group Experiences Success

Formed in September 2005, McNaughton-McKay's Vision and Traceability Group (VTG) is committed to providing automated inspection solutions for the manufacturing and inspection processes using Cognex Corporation's industry-leading products. McNaughton-McKay is under license to sell and support Cognex/DVT products in the Southeast Michigan and Northwest Ohio territories.

The VTG consists of highly trained application and sales specialists experienced in leading-edge vision technologies – technologies which make up one of the highest-growth areas in manufacturing. Engineering consultation and evaluation services are provided from the VTG application-engineering labs located in McNaughton-McKay's Madison Heights and Ann Arbor branches. These labs are set up for customers to bring in their engineering applications for a free evaluation.

Because the VTG is committed to educating the marketplace on industry-leading technologies, it also provides free hands-on training workshops and classes. This training and other VTG services are vital to the success of machine-vision installations and offered in the Southeast Michigan and Northwest Ohio markets. For more information on these scheduled classes, please visit <http://www.mc-mc.com>.

Though only recently established, the VTG has already helped several companies improve their automation, and therefore their productivity and bottom line. The

following success stories illustrate the VTG's versatility and innovative approach.

#### Success Story #1

##### Challenge

A manufacturer of automotive parts needed automated inspection to verify that two O-rings were present and that the correct bolt was installed in a particular part. However, the part was not well fixtured, and photoelectric sensors could not reliably perform the inspection.

##### VTG Solution

A Checker sensor from Cognex was used because it could detect the part and was able to position the inspection sensors in the correct location to examine the O-rings and bolt.

##### Results

This fast and easy method directly helped the manufacturer improve profitability and productivity.

#### Success Story #2



##### Challenge

A major automobile manufacturer shipped engines from their plant, but later discovered that several holes required by the assembly line were not tapped. The inconvenience of having to remove these defective engines and send them to a repair center resulted in thousands of lost dollars per occurrence.

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**Automation Fair 2005**

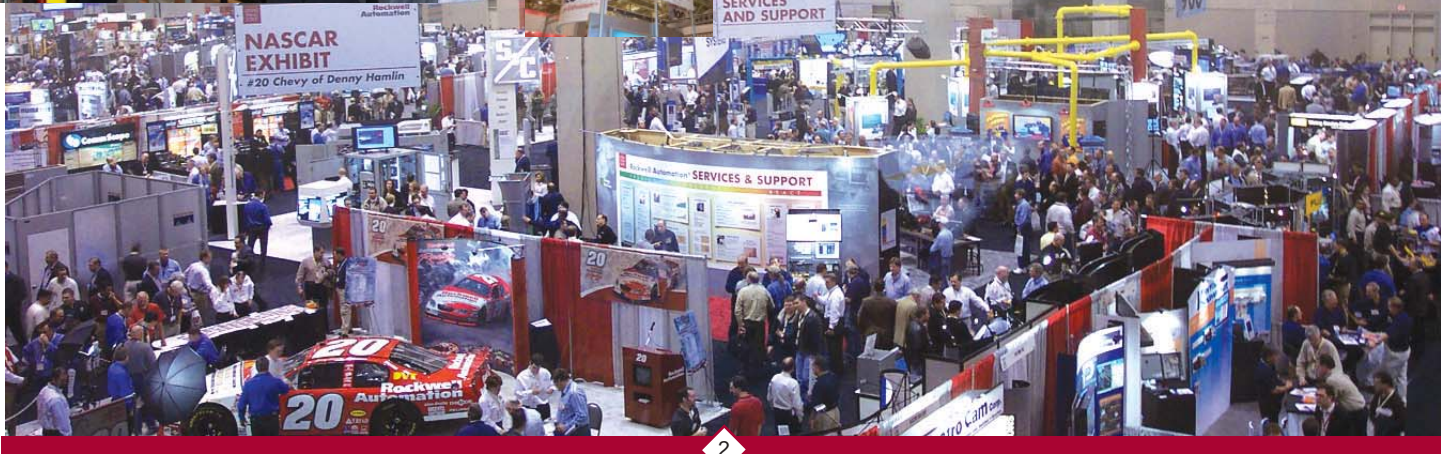
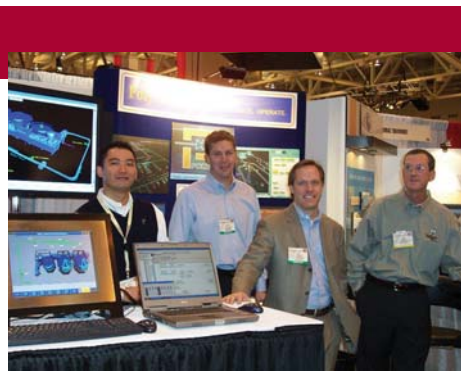
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Rockwell was proud to showcase dozens of new product and service offerings for our customers, including a range of new and enhanced controllers, software packages, displays, motors, power supplies, and Ethernet tools. A few newer products on display included:

- IntelliCENTER Software
- ArmorStart Distributed Motor Controller
- Next Generation Rotary Disconnects
- PowerFlex family of low-voltage AC drives
  - CompactLogix Controller with SERCOS Motion
  - RSAssetSecurity
  - Low inertia small frame motors
  - Kinetix 7000 High Power Servo Drive
  - 1760 Ethernet interfaces

McNaughton-McKay would like to thank all customers who attended the 2005 Automation

Fair, especially those who took advantage of the McNaughton-McKay hospitality event at the City Museum in St. Louis, which featured convenient hotel, travel, and admission packages for the fair. For information regarding these products or future Automation Fair activities, please contact a McNaughton-McKay sales engineer.



## McNaughton-McKay's Vision and Traceability Group Experiences Success

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### VTG Solution

The usual solution to this type of problem is to use an eddy current probe, which has to be inserted into a hole to determine whether threads are present. These probes typically cost several hundreds of dollars each, and are frequently damaged by incorrect part location, broken bits, or holes that were not drilled to the correct depth. Though the manufacturer usually had 25-30 eddy current probes on hand, they damaged 8-12 of them each quarter.

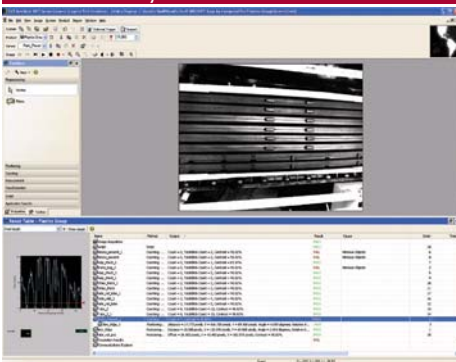
As an alternative to the typical solution, Checker sensors could be used to test holes for threads. These sensors have many advantages, such as:

- ability to detect threads from a greater distance
- ability to function without precise placement of target
- ability to function while target is moving
- configurable outputs, including part detected and pass/fail
- no moving parts

### Results

In just four easy steps, the Checker sensors can be programmed to detect the parts and verify the presence or absence of threads. These simple-to-use and cost-effective sensors could help the manufacturer reduce production delays and increase profitability.

### Success Story #3



### Challenge

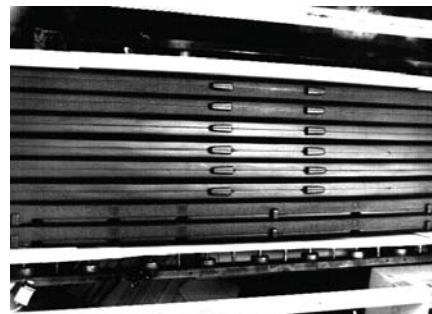
A manufacturer of bed frames repeatedly experienced a quality control problem when "packing out" products. Some shipments arrived at customer sites with incorrect, missing, extra, or defective components. The packing-out process was manual, with operators inserting

hardware into kits that were then attached to the bed frames. Multiple frames were packaged into a single carton.

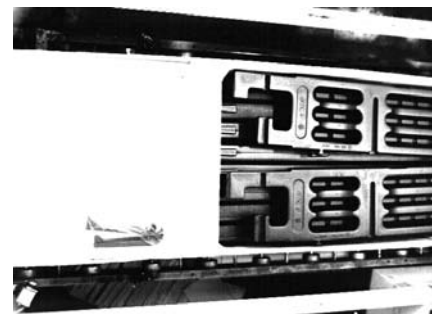
When extra parts were shipped out, the manufacturer lost revenue, had inaccurate inventory, and paid more for freight. When parts were incorrect, missing, or defective, the manufacturer had to send expedited shipments to customers, increasing labor and freight costs. Productivity decreased, and inventory for replacement components was depleted.

### VTG Solution

An automated vision solution was utilized to check all hardware kits for accuracy and quality, and a similar system was installed at pack-out for final inspection. An existing pack-out machine was retrofitted with machine vision to ensure that all components were packed into a box before it was closed. The machine, capable of up to ten different pack-out combinations or part numbers, was also equipped with a device to capture and position the boxes to be packed out.



PACK-OUT ▲



KIT ▲

Once the system determined that a box contained all necessary components, it released the box to be sealed. Upstream in process from the pack-out, the components to be packaged were identified with bar code labels to ensure an accurate mix and to allow vision-quality inspection systems to check for defects in subcomponents.

### Results

The manufacturer improved customer satisfaction with 100% accurate and defect-free shipments. They also improved profitability and increased productivity by using labor and inventory more effectively. The resulting streamlined inventory management saved money by reducing material stock, associated labor, and logistical management of "just in case" inventory.

### Success Story #4

### Challenge

A major food manufacturer has difficulty inspecting individually wrapped cookies to ensure that they are present, whole, and in the proper orientation to the package. The manufacturer also needs to interlock a quality control system to the existing PLC to communicate pass or fail results. The system needs to be able to inspect 120-215 cookie "jackets" per minute and be flexible enough to function on the main facility's three dedicated lines and two flex lines, as well as on lines in facilities in two other states.

### VTG Solution

The projected plan is to retrofit existing lines with inspection stations that include engineered LED lighting solutions and two DVT 550M SmartImage sensors. Each sensor camera can image two cookies and has 640x480-pixel resolution, and the LED solutions will include spectrum linear monster lights and diffuser panels and shrouds.

### Results

The manufacturer is projected to be able to detect more than 99.9% of all cookie defects and ultimately to be capable of Six Sigma quality control, as well as to keep false rejects below 1% of the product inspected. The proposed system will provide the manufacturer with significant cost and time savings.

### Conclusion

McNaughton-McKay VTG members Andy Reed, Michael James, Terry Whitehead, and VTG Director William Amato provided input for this article. If you would like more information about how the VTG can help your company improve quality, productivity, and profit, please contact McNaughton-McKay.

*Editors note: Products and services discussed in this article are not available at all McNaughton-McKay Electric locations.*



## FactoryTalk – Integrating Your Production Software

Real-time communication between the factory floor and the rest of your company is an increasingly critical ability in today's business environment. Fast and functional networking can be achieved with Rockwell Software FactoryTalk, an integrated suite of highly scalable, modular, and standards-based software applications from Rockwell Automation. With this comprehensive tool, your company can improve responsiveness, increase productivity, reduce costs, and ensure regulatory compliance.

As integration of the plant floor with information systems becomes a strategic imperative, Rockwell is expanding its mission to help its customers optimize production and improve competitiveness by widening its manufacturing execution system (MES) offerings, deploying a service-oriented architecture (SOA), and bringing together their various software products into a single integrated suite.

### FactoryTalk – An Integrated Suite of Plant-Wide Information Software

The FactoryTalk suite features tight integration with the Rockwell Automation Logix control platform, as well as extensive connectivity to third-party and legacy systems.

FactoryTalk applications will run on the FactoryTalk SOA – a common set of software services that includes security, diagnostics, auditing, data model, licensing, real-time data, historical data, configuration, and alarms and events. And, as the company releases additional versions of its Rockwell Software, Propack Data, and Arena offerings, those products will also be incorporated into the FactoryTalk suite.

The FactoryTalk suite consists of multiple production disciplines, used individually or in combination, which correspond with common manufacturing activities that require integration of plant-floor data with business systems. These disciplines leverage the knowledge-based infrastructure inherent in the

**ROCKWELL  
SOFTWARE**



FactoryTalk SOA for more efficient data sharing, easier integration, and faster startup. They are:

- **Performance and Visibility** – a window into the process so you can make better decisions. FactoryTalk offers solutions for the creation and display of key metrics and content in the context of operational effectiveness, including:

- reporting and analysis tools such as online analytical processing (OLAP) and overall equipment effectiveness (OEE)
- role-based operator interfaces and dashboards
- key performance indicators (KPI)
- situational display at machine, line, plant, and enterprise levels.

Products available in this category include RSBizWare PlantMetrics and RSVIEW.

- **Production Management** – real-time coordination across your plant-wide production process. FactoryTalk products in this category include solutions for:
  - order scheduling and execution
  - tracking and genealogy
  - resource management
  - multi-site production synchronization.

Offerings in this category include RSBizWare Scheduler, RSBizWare Batch, and Propack Data PMX.

- **Asset Management** – applications such as RSMACC to create a foundation for optimizing maintenance and plant operations to improve your resource availability through:
  - risk mitigation and change management procedures
  - comprehensive diagnostics and device configuration
  - calibration and real-time monitoring
  - auditing of operator actions and device health.
- **Quality and Compliance** – operational processes and procedures to meet standards or specifications through:
  - simplifying regulatory compliance and reporting
  - automated, proactive quality environments
  - improving first-pass quality
  - enhancing product and process consistency.

Offerings available include RSBizWare eProcedure and Propack Data PMX SkillTrack.

- **Data Management** – tools and methods to use for collecting, transforming, and integrating production information, such as:
  - event, process, or master data collection and storage
  - integration and workflow across disparate systems
  - organizing, synchronizing, archiving, and aggregating information
  - automated and manual data collection.

Products available in this category include RSBizWare, RSSql, RSLink, and RSBizWare Historian.

- **Design and Configuration** – integrated environments for creating, modeling, and programming your production processes, including:
  - automation control programming
  - setup and propagation of reusable equipment
  - ordering and product definitions
  - rapid processes development, simulation, and deployment.

This category includes continued enhancements to software solutions such as RSLogix 5000 as well as Arena simulation applications.

### Automation and Information Enabled

FactoryTalk complements Rockwell's industry-leading Logix control platform, recognized by the industry as the most versatile multidisciplinary control system available. The combination of the Logix control platform and FactoryTalk software suite delivers scope of supply, scalability, and real-time information benefits through the Rockwell Automation Integrated Architecture. This combination results in higher performing systems and faster time-to-market at lower total cost of ownership.

To learn more about how Rockwell Software FactoryTalk can optimize your company's performance, contact your McNaughton-McKay sales engineer.



## Allen-Bradley Offers Wireless Pocket DriveExplorer Software

Using your Allen-Bradley PowerFlex AC drives and legacy SCANport-enabled drives can become even more convenient with Pocket DriveExplorer software for Pocket PC from Rockwell Automation. This versatile software lets you wirelessly program, troubleshoot, and monitor drives from such devices as Dell Axims and HP iPAQs, eliminating the need for a direct, wired connection. Pocket DriveExplorer can improve safety, because there's no need to open panel doors. Plus, built-in security features help limit access to the drives, thereby increasing overall production security.

The Pocket DriveExplorer software uses a wireless interface module (WIM) and has several connectivity options: local



## Meltric's Decontactor Series Plugs and Receptacles Rated to 100,000 Amps

The Decontactor Series plugs and receptacles from Meltric Corporation can improve plant safety and simplify compliance, while reducing total costs and downtime. Plus, Decontactors are the only plugs and receptacles rated to make and withstand short circuit currents up to 100,000 amps, giving a margin of safety far beyond that offered by pin and sleeve or twist-type plugs and receptacles.

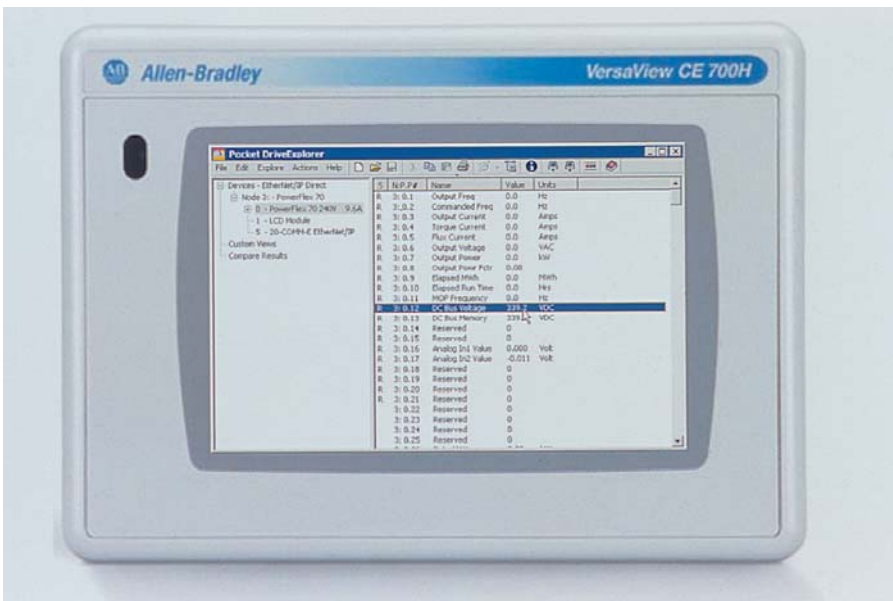
During connection, the plug contacts engage live receptacle contacts only after they have been completely enclosed within the device's arc chambers. There is no exposure to arc flash outside the receptacle, even during an overload. Decontactors feature an integral switching mechanism. After the plug is disconnected, the receptacle's safety shutter affords a further measure of safety by blocking unintended contact with live components. When Decontactors are used to connect welders, motors, or other electrical equipment to power sources, workers are protected from injury even if they plug into a short circuit.

The 100 kA short circuit tests on the Decontactor unit were performed in accordance with UL Subject 2682 – Switch Rated Plugs and Receptacles, making the units safe to make and break electrical connections and to perform the functions of a motor circuit/branch circuit disconnect switch. With Decontactors installed, workers can safely and easily make and break electrical connections under full load, eliminating the need to purchase mechanical interlocks or disconnect switches.

Since the Decontactor receptacle prevents access to live components during equipment connection and disconnection, NFPA 70E safety procedures for performing energized electrical work do not apply and the need for personal protective equipment is eliminated.

Motors and other equipment can be pre-wired and pre-tested with Decontactors, resulting in minimal downtime when a faulty unit needs to be replaced. The faulty unit only needs to be unplugged and removed and a new unit installed.

Decontactor Series plugs and receptacles are 100 kA short circuit rated and are available in 20-, 30-, 60-, and 100-amp sizes. Contact a McNaughton-McKay sales engineer for these and other products from Meltric.



or remote serial, Wi-Fi (EtherNet/IP), and local or remote Bluetooth wireless technology. Drives on Wi-Fi can be programmed to sound an alarm when users are operating outside set parameters. Other highlights of the Pocket PC software include:

- status monitor
- parameter list editor
- file & group display editor
- upload/download capability
- device flash
- configuration manager
- device properties that allow you to view additional information

You've come to trust Allen-Bradley drives for their high performance and reliability. Now make them work even harder by adding Pocket DriveExplorer software. Contact the sales engineers at McNaughton-McKay for more information





## Hoffman Ceiling-Mount Enclosure Prevents Fluid Accumulation

Food and beverage processors demand sanitary processing lines, and Hoffman helps meet that demand with its innovative 4X stainless steel ceiling-mount enclosure. This enclosure is specifically designed to eliminate fluid accumulation, a long-held concern with traditional ceiling-mounted JIC enclosures, since pooled water is a breeding ground for bacteria.



The ceiling-mount enclosure boasts a unique cover design that prevents fluids from pooling, thus speeding line changeovers and eliminating a potential source of product contamination. Constructed of 304 stainless steel, this enclosure features foam-in-place gasketing and sealed screw wells to ensure a UL Type 4X seal and, subsequently, a more thorough washdown. Eight sizes are available.

For more information about the Hoffman Type 4X ceiling-mount enclosure or other enclosure needs, contact a McNaughton-McKay sales engineer.



## Hoffman Arc Flash Safety System Reduces Need to Access Enclosures



Damaging arc flash events are often triggered by electrical faults occurring while accessing electrical enclosures. Hoffman's innovative Arc Flash Safety System minimizes the dangers of arc flash explosions and meets National Fire Protection Agency (NFPA) standards by providing safe, convenient, and affordable exterior access to controls.

To protect operators, NFPA 70E standards require a "flash protection boundary." Only highly-trained personnel with fire retardant protective gear and non-conductive wands may breach electrical equipment enclosures capable of generating an arc flash. This method is not only potentially hazardous, but entails considerable compliance costs and may require a production shutdown to monitor controls or initiate a simple programming change.

Enclosures equipped with the Hoffman Arc Flash Safety System, however, reduce the risks of arc flash explosions by providing convenient access to enclosed components without having

to open the enclosure door. Protection and production are enhanced, while costs are greatly reduced.

At the heart of the Hoffman system are the INTERSAFE data interface ports, programming ports designed to provide data access through an enclosure wall without opening doors. Hoffman offers 24 standard port configurations featuring connectors that interface with all major data and industrial communication protocols, and either a breaker-protected GFCI or standard duplex outlet. Hoffman also offers modified and custom panels with any combination of available connectors mounted to customer specifications.

Completing the system are essential accessories, including steel and stainless steel window kits for exterior visual monitoring of controls, folding shelves to hold laptops and test equipment, and external keyboard and documentation storage.

The Arc Flash Safety System components can be factory installed in your Hoffman enclosure or ordered separately for retrofit applications. To learn more about the Hoffman Arc Flash Safety System, contact a McNaughton-McKay sales engineer.



## Hubbell Offers Comprehensive Metal Raceway Line

By listening closely to customers, Hubbell has once again exceeded expectations, this time with its metal surface raceway product line. Hubbell Wiring Systems, including Hubbell Wiring Device-Kellems and Hubbell Premise Wiring, continue meeting customers' needs for quality solutions with their metal raceway line, consisting of six steel profiles and two aluminum profiles.



Hubbell conducted extensive interviews and in-depth focus groups with customers, then engaged state-of-the-art research and development to create metal raceway with outstanding capacity, installation ease, and aesthetics. Some of the features of this product line include:

- UL-listed transition fittings to allow transition from Hubbell metal raceway to Wiremold metal raceway
- Attractive and functional box with patent-pending Hubbell Handi-Screw
- Ability to handle up to three Cat. 5, 5e, or 6 cables in 750IV series
- Unique Hubbell-designed and self-manufactured 15-amp receptacles for Metal PlugTrak multi-outlet, pre-wired steel raceway system
- Patent-pending 70/30 divider in 4000 series to allow greater expansion and room for datacom applications

Hubbell metal raceway can satisfy your most demanding surface raceway applications for either power or datacom. For more information, contact the sales engineers at McNaughton-McKay.



*NewsBytes readers range from engineers to executives, maintenance personnel to technicians, with diverse backgrounds and educations. The purpose of this feature is to promote a greater understanding of the technologies our products and processes rely upon, to draw attention to aspects of them perhaps not commonly considered, and to provide key information on some of the concepts of our industry.*

## Short-Term Power Sags Cost Time and Money

You may know that the short-term power sag is responsible for a significant loss of revenue due to equipment damage and production downtime. But did you know that a study by the Electrical Power Research Institute showed that nine power sags occur for every one instance of a complete power failure? You can protect your business from these costly power disturbances using a two-pronged approach.

Your first line of defense is to regulate the power coming into your facility by means of constant voltage transformers, three-phase power conditioners, and uninterruptible power systems. Your second weapon is to purchase equipment designed to tolerate power sags. The standard for rating sag tolerance levels is the Semiconductor Equipment and Materials Institute's (SEMI) Specification for Semiconductor Processing Equipment Voltage Sag Immunity, SEMI F47.

The SEMI F47 standard provides specifications for semiconductor processing equipment that will lead to improved selection criteria for sub-components and improvements in equipment systems design. The standard focuses on many types of equipment, from surface prep and cleaning to etch, thermal, metrology, and more. Automated test equipment is also covered in the standard, and a voltage-to-time curve is provided to show how much voltage an asset is typically subjected to during normal operation.



To begin protecting your equipment from sags and your business from the inefficiencies caused by them, the components most critical to operations need to be identified. In most cases, these include your AC/DC power supply. The majority of these devices in use today do not meet the sag immunity performance level set by the SEMI F47, at least not without some special design considerations.

In order to get your power supply up to par, you could use a universal input power supply and power from the higher line voltage. But operating from these voltages isn't always possible. You could also try de-rating the power supply to a lower output current. But doing so may leave you at risk for more input sags.

Your best solution for avoiding power sags is to use a power supply that fully meets the F47 standard at all voltage ranges. How do you do this? By selecting independently tested, F47-compliant power supplies.

For additional information about power sag or other power-quality related issues, or for information on power-quality products and suppliers, contact a sales engineer at McNaughton-McKay.



## Acme Offers a Variety of Industrial Transformers

With its TB Series and CE Series industrial control transformers, Acme Electric Corporation adds to its versatile and powerful line.

**TB Series Open Core and Coil Industrial Control Transformers** Acme's TB Series transformers successfully strike a balance between accommodating momentary current inrushes (caused when electromagnetic components are energized) and keeping secondary voltage stability within practical limits. The TB Series transformers have applications in motor starters, contactors, solenoids, timer circuits, relays, control panels, and robotics.



To ensure maximum safety, these dry-type, step-down transformers have the secondary control circuit isolated from the primary line circuit. Secondary circuit voltage drop between no-load and momentary overload is exceptionally low, ensuring reliable operation of electromagnetic components and possible use of a smaller and less expensive industrial control transformer. Voltage regulation of Acme's TB Series transformers meet or exceed UL, CSA, NEMA, ANSI, and OSHA standards. Additional features include:

- 600-volt class and below
- 50-1000 VA, 50/60 Hz
- 80°C temperature rise, 103°C insulation class
- high-quality silicon steel lamination to minimize core losses and increase efficiency

- precision-split, bobbin-wound coils for improved regulation
- optional primary fuse blocks and secondary fuse kits
- series-parallel connecting links for reduced wiring and labor costs
- terminal blocks that allow full access for ring terminals (providing easy installation even with solid strand conductors)
- integrally-molded terminal blocks with isolation barriers to prevent arc over
- footprint that matches TA Series for easy interchangeability
- copper windings on all groups
- heavy-gauge steel mounting plate that adapts to various mounting dimensions
- ten-year limited warranty.

### CE Series Encapsulated Industrial Control Transformers

Acme's CE Series transformers comply with requirements established by the International Electrotechnical Commission (IEC) for use of control circuit transformers in European Union countries. Regulations that apply to control transformers include Low Voltage Directive 73/23/EEC, Electromagnetic Compatibility (EMC) Directive 89/336/EEC, and CE Mark (EN60742). The CE Series transformers are also UL and cUL listed. These transformers provide the following features and benefits:

- 50-750 VA, 50/60 Hz
- 55°C rise for cooler operation
- epoxy-encapsulated design to protect core and coil assembly from potentially damaging contaminants
- integrally-molded terminal blocks with isolation barriers to prevent arc over
- terminal blocks that allow full access for ring terminals (providing easy installation)
- heavy-gauge steel mounting feet
- available factory- or field-installed fuse blocks to provide integral fusing on the primary circuit only, or on both the primary and secondary circuits
- dual labeling for easy product identification when equipped with a fuse block
- standard touch-proof terminal block covers with an IP-20 safety rating
- low profile and more compact design
- ten-year limited warranty.

For more information about Acme's transformers, contact the sales engineers at McNaughton-McKay.



## Ferraz Shawmut Finger-Safe Power Distribution Blocks

Ferraz Shawmut Finger-Safe Power Distribution Blocks (FSPDBs) are just what their name suggests, safe to the touch. These FSPDBs deliver IP-20 grade protection and can easily be used for splicing cables or as fixed junction tap-off points.



With Finger-Safe Power Distribution Blocks, the need for special covers or custom Plexiglas sheets to protect electrical panels is eliminated. FSPDBs connect easily. They snap onto a 35 mm DIN rail for quick and effortless installation. Other features include:

- space-saving footprints
- time-saving captive termination screws
- multiple openings to accommodate a wide range of wire sizes.

Additional Finger-Safe Power Distribution Block options include the ability to:

- create multiple-pole units
- cover unused wire openings
- identify circuit details on the blocks.

Ferraz Shawmut FSPDBs meet UL and CSA approvals and the CE mark ensures international acceptance. For more information on Ferraz Shawmut Finger-Safe Power Distribution Blocks, contact the sales engineers at McNaughton-McKay.



## Ferraz Shawmut Surge-Trap TVSS Exceeds Current Rating Requirements

The Ferraz Shawmut Surge-Trap Transient Voltage Surge Suppressor (TVSS) offers a unique patented, thermally-protected metal oxide varistor (MOV) that does not require additional overcurrent protection. The TVSS is engineered to provide an AC short circuit rating that meets the requirements of the forthcoming UL 1449, Third Edition, which means users won't need to update systems in the near future.



Among the many applications for the Surge-Trap are AC/DC power distribution, high-voltage power supplies, telecommunications equipment, PLC applications, electronic motor controllers and starters, medical equipment, UPS, security, and other highly sensitive, integrated electronics systems.

The Surge-Trap mounts easily on DIN rail or by direct pane mounting to protect vital equipment and components from expensive damage at point-of-use. Other features of the Ferraz Shawmut Surge-Trap TVSS include:

- IP20-grade finger-safe protection
- High interrupt rating
- Individual or gang connections
- Visual and remote status indicators to critical circuits

Kent Walker, director of product marketing for Ferraz Shawmut, says that "...while some electrical professionals

believe that surge suppression installed at the service entrance will protect all of the plant's equipment, this is certainly not the case. In many instances transient voltage surges are local events in which one piece of equipment discharges harmful overvoltages into surrounding systems. Without adequate TVSS protection, these nearby systems can be damaged, diminishing productivity and profitability as the equipment is repaired or replaced."

For additional information about Ferraz Shawmut's innovative Surge-Trap TVSS product line, contact a McNaughton-McKay sales engineer.



## Rockwell Automation Offers Stainless Steel Motors with Full Washdown Capabilities

Hygienic design standards in government-regulated industries such as food, beverage, and life-sciences manufacturing are now met by Allen-Bradley's MP-Series stainless steel (MPS) motors from Rockwell Automation. These high-performance servo motors feature an easily cleanable design in accordance with best practices for food-safety requirements. Because the MPS motors are capable of full washdown, they can be placed closer to applications, saving space and taking advantage of servo motors in areas where the technology was not previously available.

**Designed for Washdown Applications**  
Meeting IP66, IP67, and IP69K standards, the MPS motors' passivated 300-series



stainless steel housing can be cleaned with caustic chemicals without worry of corrosion or motor damage, and the smooth cylindrical housing is designed to withstand 1,200 psi washdowns for water and solid ingress protection.

The MPS motors are equipped with a shaft slinger, which protects the shaft seal against direct high-pressure spray and prevents abrasives from damaging the seal. This feature allows manufacturers to install motors exactly where they're needed without requiring a mechanical transmission or expensive protection guards.

Traditional washdown applications use mechanical, hydraulic, and pneumatic power transmissions, while standard servo motors need to be encased in costly housings. The MP-Series stainless steel motors, however, can be applied on the machine exactly where they are needed, eliminating housings and extra parts such as chains, gears, and bearings. The reduction in parts allows machine builders to optimize their machine configuration.

### Integrated Motion Control

The MPS motors are part of the Kinetix Integrated Motion solution, which combines Allen-Bradley motors, servo drives, controllers, and other technologies into a seamless motion-control solution. MPS motors allow Kinetix solutions to be applied to an even greater range of applications, including those that involve close contact with food and beverage processing.

MP-Series stainless steel motors are available in three frame sizes (100 mm, 130 mm, and 165 mm) and provide peak torque from 11.1 to 67.8 Nm (98-600 lb.-in.). To help simplify installation, the motors feature factory-sealed flying leads, eliminating the need to open the motors to make connections. The sealed flying leads also enhance the motors' washdown protection capabilities.

To learn more about the Allen-Bradley MPS motors, contact a McNaughton-McKay sales engineer.



## Thomas & Betts Products to Meet Your Needs

For electrical application needs, consider products from Thomas & Betts. Here are some highlights:



### Silver Grip TCF Series Tray/Cord Fittings

Whether the business is petrochemical, food processing, wastewater, or pharmaceutical, Thomas & Betts has a solution with their Silver Grip TCF Series tray/cord fittings. The series includes aluminum fittings up to two inches and 316 stainless steel fittings up to one inch. Hub sizes range from one-half inch to two inches NPT in aluminum, and from one-half to one-inch NPT in 316 stainless steel. The fittings were designed for use in Class I, Gas and Vapor environments. The aluminum fittings are ideal for terminating portable cord and tray cables in areas where corrosion, weight, or spark hazards are a concern.

The fittings include a tapered neoprene bushing and O-ring seal that resist moisture and dirt. The chuck grip provides high mechanical pullout that exceeds applicable performance requirements. For ease-of-use, the fittings can be tightened by hand, without tools. Tray cable fittings comply with IEC requirements for Class I, Zone 2 locations. The portable cord fittings comply with IEC requirements for Class I, Zone 1 locations when used with enclosures that don't contain arcing or sparking devices. For enclosures with arcing and sparking devices, TCF fittings must be used with a certified Class I hazardous location sealing fitting.

### Sta-Kon High Temperature Wire Joints

These wire joints from Thomas & Betts provide a crimping solution in high-temperature areas, including automotive wiring harnesses and ballast-power connections in lighting fixtures, and numerous other construction applications. Brazed copper sleeves prevent connec-

tions from separating during crimping, while internal serrations enable cold flow for increased conductivity and pullout strength.

Key features of Sta-Kon high temperature wire joints include:

- rated for temperatures up to 150°C (302°F)
- rated for 600-volt maximum
- molded, one-piece nylon housing for electrical insulation
- UL listed
- CSA approved

Sta-Kon high temperature wire joints are easily installed with Sta-Kon hand or power tools and are available in three wire range sizes.



### E-Z-Code EZL 100 Printer Kit

This wire marking system from Thomas & Betts contains a printer and labels to make wire marking fast and simple. The convenient kit comes in a durable, hard-sided case and includes all required accessories, including batteries.

The center of the all-inclusive kit is the E-Z-Code EZL 100-Label Printer. The printer is designed for the way electricians work, enabling users to instantly create labels for wire wrapping, terminal blocks, device covers, patch panels, and more. The hand-held printer is lightweight and ergonomic, with a large backlit display, keys for common electrical symbols, and pre-programmed one-touch hot-keys. A wire wrap hot-key allows users to wire wrap without knowing the wire diameters. The EZL 100-Label Printer even has a built-in memory to recall the last label created. Users can also store up to eight custom labels for maximum efficiency.

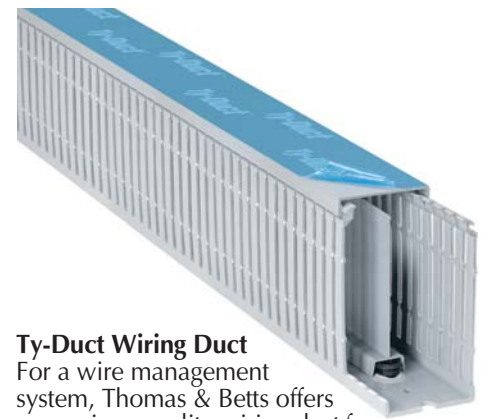
The printer labels are easy to load, too. Convenient snap-in label cassettes are available in either flexible nylon for curved/highly textured surfaces or permanent polyester for flat surfaces in four convenient tape sizes. Both types of labels will stick and last. The kit includes

two cassettes. The labels are smear-resistant and have easy crack-and-peel backings. Users have a choice of five type sizes, making the labels easy to read.

### E-Z-Code Heat-Shrinkable Markers

For those who prefer to avoid adhesives, Thomas & Betts offers E-Z-Code Heat-Shrinkable Markers that allow operators to identify wire and cable with durable sleeves that are applied with heat guns. The sleeves may be held in place on the wire before shrinking. Designed especially for the harsh environments encountered by panel builders, maintenance electricians, and manufacturing operators, E-Z-Code Heat-Shrinkable Markers are constructed of flame-retardant polyolefin to offer extra protection and insulation for wire and cable with a shrink ratio of three-to-one. When used with the E-Z-Code EZL-100 Thermal Label Printer, the print will withstand harsh solvents, fuel, and ultraviolet exposure. The labels will also tolerate high humidity and temperature, as well as corrosive environments.

Operators have the flexibility to select different lengths using the same cassette, since the markers are packaged on one continuous five-foot roll. The markers are available in a variety of widths and come in either white or yellow.



### Ty-Duct Wiring Duct

For a wire management system, Thomas & Betts offers a premium-quality wiring duct for controlling cables in point-to-point wiring. This system is ideal for electrical enclosures, machine building, and data/communications panels and closets.

Ty-Duct Wiring Duct can be installed more easily, with less force and more speed, than other wiring duct products due to its two-point contact design and triple restricted slots, which also provide better wire retention in the duct. A universal mounting clip serves multiple purposes: either the divider can be snapped into the base, or two slot sizes

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## Thomas & Betts Products to Meet Your Needs

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on the button will accommodate nylon cable ties or hook and loop fasteners. Embossed holes allow installation of combo buttons after the duct has been riveted to the panel. The protective film on the cover of the duct still allows marking or labeling with temporary ink. The cover is also grooved to provide a better grip for installation and removal. For greater flexibility-of-use, the system is available in solid, wide slot, narrow slot, and round hole types. Tooling and accessories are also available.

Ty-Duct Wiring Duct is UL recognized for continuous use at temperatures ranging from -40°F to 14°F and has a UL 94 flammability rating of V-0. The system conforms to NFPA 79-2002, Section 14.3.1 requirements for flame-retardant material, is CE compliant, and CSA and RoHS certified.

### Kindorf TPE Cable Insulator Clamps

These clamps are Thomas & Betts' economical, lightweight, and unbreakable cable support alternative to porcelain. The clamps feature a one-piece thermoplastic elastomer (TPE) insulator that will not decay like maple clamps. The TPE construction is flame-retardant, as well as ultraviolet and chemical-resistant.

The TPE insulator features a tapered flange to isolate and protect cable. The insulator is secured with a corrosion-resistant, electro-galvanized clamp and fastened with a nut and bolt made from corrosion-resistant Everdur silicon bronze. The TPE Cable Insulator Clamp is UL listed and has dielectric strength of 640 volts per mil.

TPE Cable Insulator Clamps are available in sizes to hold cables with outer diameters ranging from three-eighths inch to four and one-half inches. The Kindorf TPE Cable Insulator Clamp's one-piece cable insulator fits all Kindorf one and one half-inch channels, as well as all one and five eighths-inch channel systems.

Contact your McNaughton-McKay sales engineer to select from the wide range of products available from Thomas & Betts.



## Cobalt HF – The RFID Solution

When factory automation can benefit from Radio Frequency Identification (RFID), the Cobalt HF product family from Escort Memory Systems provides the solution.

For convenience and flexibility, Cobalt HF products can't be beat. Users are able to configure system connectivity, performance, and operating range. Plug-n-play components are easy to mix and match for system customization. The entire Cobalt HF product family integrates seamlessly with any Escort Memory Systems product thanks to a single architecture. And it even connects to Ethernet and serial connections, communicating easily with many different host systems. Cobalt HF products

- new toolset benefits such as the Dashboard, a Windows PC-based utility, for easy configuration, debugging, and maintenance
- an expanded command set that builds on previous versions of Escort Memory Systems products and is backward compatible
- multi-drop networks, including up to 16 integrated reader/antennas per communication module, providing high-speed communications and lowest price per point
- multi-protocol support that handles read and write operations for all ISO 15693 and ISO 14443A passive RFID tags

Additional Cobalt HF features allow multiple tag-in-field read and write operations. And the system operates at the universal HF RFID frequency of 13.56 MHz, a stable RFID standard. Components of the Cobalt HF system include integrated reader/antennas,



are designed specifically for industrial applications, so they are rugged, compact, easily integrated, and have high connectivity. The systems are also easy to install, debug, and maintain. Whether the industry is pharmaceutical, automotive, electronics, food processing, or clinical, the Cobalt HF family of RFID products will provide the reliability required for any auto-identification application.

Features of the Cobalt HF product line include:

- C-Macro logic that enables intelligence to be distributed to the point-of-use, avoiding network traffic overload and enabling high-speed local decision making

modular antenna/controllers, integrated controllers, and communications modules. A software kit with utilities for data filtering and firmware management also includes a number of accessories, such as remote antennas, cables, connectors, and power supplies.

If you're in the market for a rugged state-of-the-art RFID system capable of providing highly reliable performance in the harshest industrial environment, or if you'd like to know more about the Cobalt HF product family, contact a McNaughton-McKay sales engineer today.



## Strategic Maintenance: An Untapped Resource (Part I of II)

Quick, what's your maintenance strategy? You do some preventive maintenance, but your strategy is primarily based on a "when it breaks, fix it" policy? If so, then you really don't have a strategy—and you're not alone. Most companies still find themselves behind the proverbial eight-ball when it comes to maintenance. They want to take care of their plant assets—a maintenance schedule is in place—but production and other issues push scheduled repairs to the back burner. The resources and/or time are simply not available. Meanwhile, downtime is increasing, the spare parts may become obsolete, and management is lamenting the combined costs of repair and downtime to their bottom lines.

Sound familiar? It doesn't have to be this way. You can gain control of your assets and their well-being, and by doing so, boost your top and bottom lines, with maintenance. With a proper maintenance strategy, your plant will run smoothly and efficiently, and you'll be amazed at the savings. And if you have lean aspirations, you'll suddenly realize they're not as far out of reach as they once seemed.

### Types of Maintenance

If your company is like most, all of your plant assets are on a maintenance schedule. This approach isn't bad—certainly, equipment should be checked and maintained regularly—but it's only one approach. To truly maximize equipment uptime and reduce maintenance costs, a proper maintenance strategy should be implemented. But before discussing strategy, let's familiarize ourselves with the different types of maintenance at our disposal: predictive, preventive, and reactive.

#### **Predictive Maintenance**

Maintenance that monitors the condition and operation of equipment constantly—or, at least, regularly—to determine if equipment failure may be imminent is predictive. The predictive approach would take action on a piece of equipment, regardless of its current operating state, to avoid the consequences of failure later on. Changes are made on assets at a scheduled, convenient, cost-effective time instead of when operation



has shut down and your company is missing profit opportunities. Plant assets typically last longer and spend more of their useful lives in uptime when a company implements a predictive maintenance approach as opposed to a simple preventive plan. Profits increase, costs decrease. And the best part? Most catastrophes can be avoided.

#### **Preventive Maintenance**

The schedule-based approach mentioned earlier, and the one we're all most familiar with, is preventive maintenance. Preventive maintenance is performed on a periodic, predetermined basis to keep an asset (or aspects of an asset) in good working condition. Though this approach works well for large equipment and production processes, preventive maintenance of automated equipment can be overlooked due to its complexity. Even so, preventive maintenance keeps things running, and the equipment gets repaired (or maintained) on a regular basis regardless of its condition, which is a good thing. This reduces equipment downtime and extends the asset's life as well. One potential downside, however, is the possibility of spending time, money, and resources on a task that may not be required.

#### **Reactive Maintenance**

The old adage "If it ain't broke, don't fix it" defines the approach of reactive maintenance. Rather than maintain the asset during its useful life, thereby prolonging that life and saving on more costly catastrophic repairs, the reactive approach is to repair or replace equipment only when problems occur. Unfortunately, many more companies than you imagine operate with the reactive mindset. Ultimately, they're going to spend more time and money on maintenance because of more frequent replacement and higher capital costs. Because reactive-induced downtime events are usually frequent, lengthy, and unplanned, labor costs are higher and the company loses out on massive amounts of potential profit.

Ironically, reactive maintenance does have a bright side. If your asset doesn't affect product quality or revenue, and the repair, replacement, and downtime costs are within a reasonable range, then the reactive approach might be right.

### Strategic Maintenance

Maintenance goes beyond keeping production equipment running or repairing it once it's down. Truthfully, each of the maintenance approaches detailed above is important in its own way. When each is implemented together as a comprehensive maintenance strategy, your business will take control of its assets and start to manage their operation and well-being far more effectively and efficiently than ever before. The increase in machine uptime means that your lean business will flourish. You'll be better able to keep pace with customer demand. The trick is to begin viewing maintenance as a strategy instead of as overhead.

A strategic approach to maintenance involves taking equipment needs into consideration throughout their life spans, beginning all the way back with equipment design. Including engineering and maintenance managers in system design will ensure that a maintenance strategy is discussed. And it's much easier to do during the design phase rather than after the equipment has been installed. Taking maintenance into account this early on helps you determine more exactly which maintenance methodology (or combination of methodologies) to apply to each piece of equipment based on variables like the type of process and the equipment's role in that process.

For instance, an integral piece of equipment in your production process that has a direct effect on product quality and a high downtime cost might require predictive and preventive maintenance methods. With this approach, unplanned downtime would be significantly reduced and maybe eliminated altogether, and you'll know the machine is working within specifications, thereby not affecting your product adversely. Conversely, equipment in a non-critical role may require only reactive maintenance, repairs or replacement completed on an as-needed basis.

A plant-wide maintenance strategy emphasizes control, which is one of the hallmarks of lean manufacturing. Every aspect of the business must control and

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## Strategic Maintenance: An Untapped Resource (Part I of II)

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focus work toward the same goal; the simpler the goal, the better its chances of being realized. The best strategies will be a mix of predictive, preventive, and reactive maintenance approaches, each approach tailored to specific equipment and processes within the plant and their importance to production. By applying certain maintenance activities to assets at the right stages in their life cycles at the most advantageous time for your company (e.g., planned downtime, slow time of the year, etc.), strategic maintenance will maximize your equipment's performance. If you're wondering how your company might attack this effort and whether or not there's anyone out there who could help, consider Rockwell Automation's Global Manufacturing Solutions (GMS) group. The GMS group was specifically



designed to address the needs of strategic maintenance and can assist you in any way possible, from remote monitoring and support to on-site, full-time engineers to be there whenever you need them. They can even help you determine the right combination of maintenance methods for your needs by taking many factors into consideration, such as the types of assets you have, their costs, their product impacts, personnel requirements, etc. Analyzing these and other factors and assessing their related risks isn't easy, and implementing a strategic approach costs money. However, as with any good investment, the returns will be well worth it.

Look for Part II, "Strategic Maintenance: Managing Life Cycles and Bottom Lines," in the next issue.

Interested in strategic maintenance? Call the sales engineers of McNaughton-McKay today to learn more.



## Fluke Thermal Imagers Deliver Complete Solution

Until now, using a thermal imaging process to identify impending equipment failures has been both costly and time-consuming. Fluke's thermal imaging packages provide simple-to-use, low-cost solutions to identify critical predictive maintenance requirements.

Fluke offers two thermal imager models: the Ti20 and the Ti30. Both models are portable, user-friendly, intuitive, and designed to enable novice users to be up and running in just minutes. These imager packages come with all necessary accessories and training materials to minimize the learning curve and maximize resource potential, including the Fluke InsideIR professional analysis and reporting software. The Ti20 and Ti30 operate using a simple three-step point, focus, and shoot process. Both models are also non-contact and fully radiometric.

Specifications for the Ti20 thermal imager:

- Ability to capture 14 bits of information on all of its 4,800 pixels
- Battery life of three and a half hours
- Storage capacity of 50 images
- Ability to measure temperatures from -10°C to 350°C (14°F to 622°F)

Specifications for the Ti30 thermal imager:

- Ability to capture 12 bits of information for every one of its 19,200 pixels
- Battery life of five hours
- Storage capacity of 100 images
- Ability to measure temperatures from -10°C to 250°C (14°F to 482°F)

The Fluke InsideIR professional analysis and reporting software is a key feature of the thermal imaging package, whether you choose the Ti20 or the Ti30. The software allows a maintenance professional to set up an equipment inspection route for the technician to follow using the thermal imager to gather information. Captured images are compared to previous images, providing trending information critical to effective predictive maintenance. Images can be saved in standard graphical formats for insertion into documents. The reporting features allow for full reports to be saved in Word, Excel, PDF, or rich text formats. The software also allows images and data files to be e-mailed.

To find out how a Fluke thermal imaging package can improve your predictive maintenance effort and reduce downtime, contact a McNaughton-McKay sales engineer.



# ARE YOU IN COMPLIANCE!

## Rockwell Automation Integrates Safety through Your Network

Businesses are reaping the benefits of networking on the plant floor, including enhanced productivity, reduced wiring and installation, improved diagnostics, and easier access to plant floor data. Networking benefits are increased when safety products are integrated into the network while using the same cable to connect standard control devices.

### What is a Safety Network?

A safety network, similar to its everyday counterpart, is a fieldbus system that connects devices on the factory floor. However, unlike standard networks, a safety network is designed to trap errors at the device level and react with pre-determined safe operation, protecting your investment.

Safety networks are beneficial because they inherently take measures to ensure a high level of integrity within the application. These measures, such as message redundancy and cross checking, ensure that safety messages are transmitted reliably from one device and received at another at a pre-determined time, maintaining data integrity throughout the process.

By mixing safety devices and standard devices on the same network or wire,

users can achieve seamless integration and increased flexibility. Communication of the complete automation process, including safety data, occurs on one standard network. This eliminates the additional costs of safety-specific gateways and bridges, additional programming languages, and additional training and maintenance required for a new network and software.

### How Can I Implement a Safety Network?

Implementation challenges are not without solutions. In fact, Rockwell Automation makes it easy to invest in a safer, more integrated future.

### CIP Safety

CIP Safety is an extension of the Common Industrial Protocol (CIP) - a common application layer shared by open networks such as DeviceNet, ControlNet, and EtherNet/IP. This technology seamlessly integrates I/O control, device configuration, and data collection. CIP Safety includes the integration of safety devices and information into the network. Solutions using the CIP architecture enable information to flow across multiple networks, minimizing users' costs of system engineering, installing, commissioning, and maintenance, which ultimately maximizes the return on investment.

Messaging, routing, multicasting, and diagnostics capabilities are built into CIP Safety, so shutdowns can be limited to specific issues. For example, if a misaligned safety limit switch is impacting

performance of a robotic arm in a cell located at the far end of the facility, the shutdown can be limited to that particular cell.

Another key strength of CIP Safety is the ability to connect safety devices and standard devices on the same network or wire without the need for a safety controller, which can be important for a large number of applications. For example, on DeviceNet Safety, safety interlock switches can operate alongside variable speed drives, safety network monitors with light curtains, and safety programmable controllers with standard programmable controllers. The combination of standard control devices used does not affect the integrity of the safety control loop.

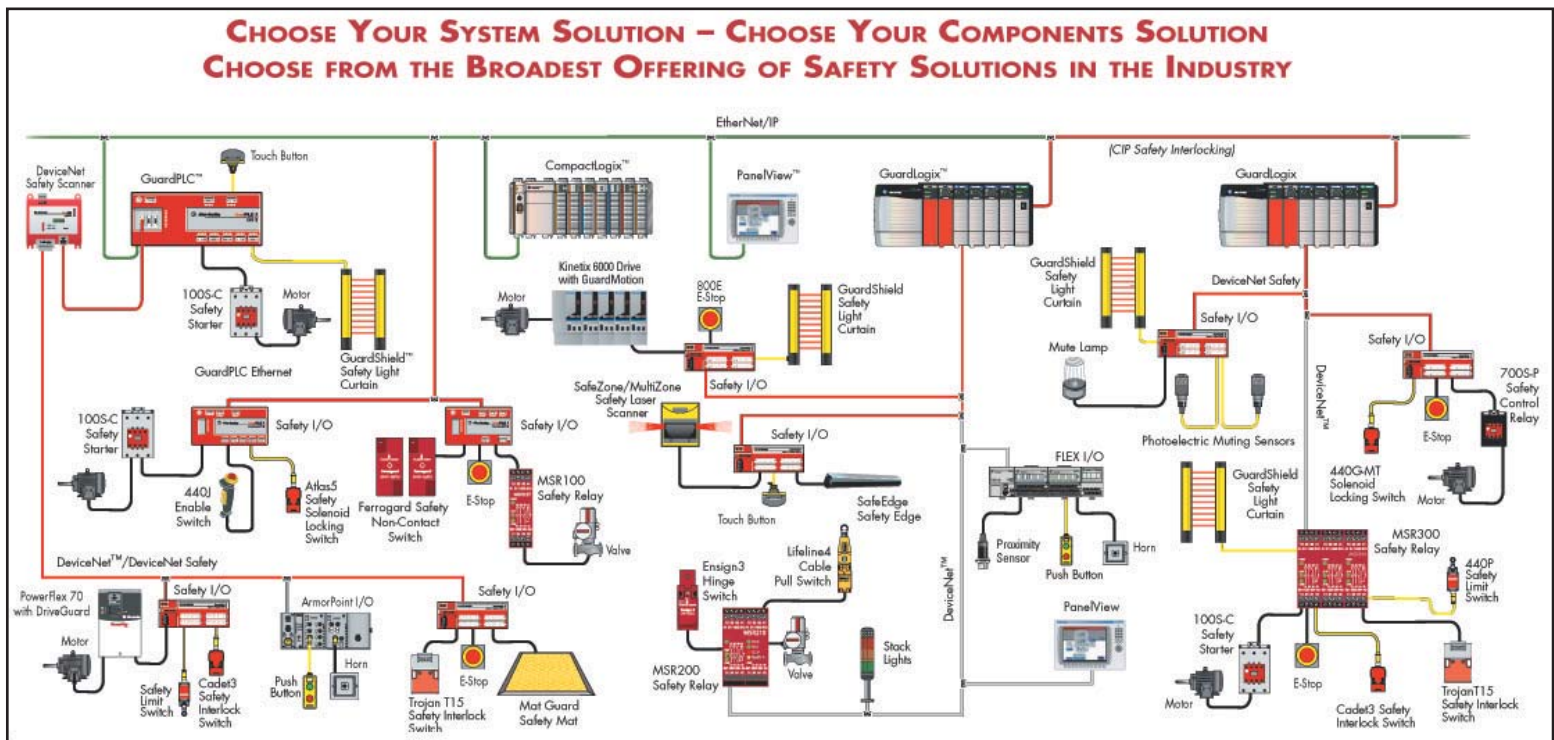
### Allen-Bradley GuardLogix

The GuardLogix controller has a two-processor safety architecture and standard programming to support integrated safety and standard control systems. It also features online editing and integrated safety functions. For users, programming is the same on GuardLogix, whether for a safety or a standard function. GuardLogix is rated up to an SIL 3 functionality.

### Allen-Bradley DeviceNet Safety Scanner

The DeviceNet Safety Scanner allows the GuardPLC to send and receive information from a wide range of standard and safety devices over a single DeviceNet network. The scanner connects directly to GuardPLC 1600 or GuardPLC 1800 controllers for easy setup. If configured with Rockwell Software

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## Rockwell Automation Integrates Safety through Your Network

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RSNetWorx for DeviceNet, up to 63 devices per scanner can be connected, including up to 32 safety nodes. The DeviceNet Safety Scanner is TÜV certified for up to SIL 3 category 4 applications.

### Allen-Bradley Multizone SafeZone Safety Laser Scanner

Rockwell Automation's safety scanner uses pulses of eye-safe infrared laser light to detect objects or persons in its sensing field over a 190° arc. Certified for both vertical and horizontal guarding applications, this scanner offers configurable safety fields with a radius of five meters, and warning fields with a radius of up to 49 meters. This enables users to solve point-of-operation, area guarding, and access detection applications with a single, flexible safety control.

### Allen-Bradley MSR300 Safety Relay Family

The MSR300 series of safety relays uses plug-n-play digital I/O expansion modules and offers a logic configuration ability with multiple inputs, such as two-hand control, e-stop/gate control, and light curtains. It also provides the ability to control multiple independent outputs. Rotary switch settings enable the MSR300 to control up to three group outputs and perform simple function block logic configurations. This enhanced logic capability, plus provision for up to 20 input circuits on one base unit, allows safety control of larger, more complex manufacturing equipment with a single-relay system.

### Allen-Bradley Kinetix 6000 and Kinetix 7000 with GuardMotion

These servo drives maximize machine availability by featuring a safe torque-off capability. With the drive output safely disabled, machine setup, cleaning, removal of jams, and other maintenance tasks can be accomplished without removing power from the entire machine. The Kinetix safe torque-off solution is TÜV certified and meets the requirements of EN-954-1 Category 3 and IEC-61508 SIL 3.

Contact a McNaughton-McKay sales engineer to select from the broadest offering of safety components available through Rockwell Automation. A sales engineer can help design a solution that makes the best use of resources and enhances your safety programs.



## SOLATRON Plus Improves Power Quality

The SOLATRON Plus three-phase power conditioner from Sola/Hevi-Duty provides true voltage regulation, surge protection, and noise isolation to protect against common power quality problems, even through inductive and poor power factor loads.

The SOLATRON Plus is appropriate for automatic packaging machinery, data rooms, UPS bypass circuits, retail store, and process equipment applications.



"Most three-phase critical industrial equipment has to settle for commercial-grade products that include fans or susceptible, unprotected electronics," said Suzette Albert, Sola/Hevi-Duty product manager. "The SOLATRON Plus combines state-of-the-art, enhanced voltage regulation technology together with the ruggedness of Sola/Hevi-Duty shielded isolation transformers and encapsulated all-mode surge suppression to ensure clean, virtually maintenance-free power."

The SOLATRON Plus features an input voltage range of -25% to +15%, and produces output voltage of less than +/- 5% of nominal voltage regulation to maintain stable, smooth power for

production and other critical processes. Common voltage configurations available are 20, 30, 50, and 75 kVa in combinations of 208-, 480-, and 600-volt offerings.

Other features include:

- rugged, industrial design
- high overload capability
- high MTBF - no fans used
- no power factor restriction on loads
- tight regulation of +/-3% for protection against sag (-25%) and swell (+15%) conditions
- failsafe, no-break auto-bypass
- status indicating lights
- shielded, copper-wound isolation transformer
- surge suppression to ANSI/IEEE and IEC Standards
- high-efficiency (96%) microprocessor-controlled tap switcher
- automatic under voltage protection
- UL1012, UL1449-2, cULus Listed

Contact your McNaughton-McKay sales engineer for more information about Sola/Hevi-Duty's SOLATRON Plus three-phase power conditioner.



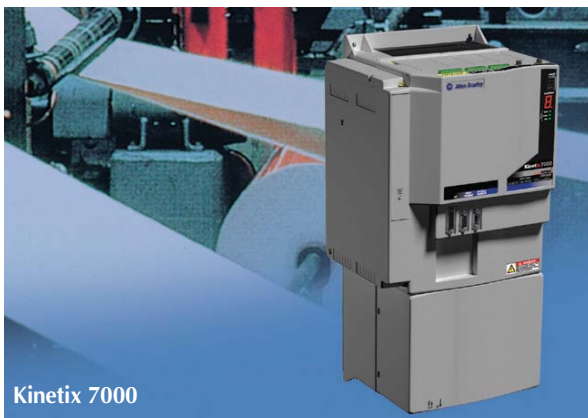
## Rockwell Automation Meets Demanding Motion-Control Needs

Integrating various drives and controllers to form a cohesive, fully functioning system has long been a problem for equipment manufacturers, software engineers, and production engineers. Rockwell Automation continues to strive to alleviate the problems caused by using incompatible devices and drives. Four of Rockwell's offerings to improve motion integration include the CompactLogix 1768-L43 controller, Kinetix 6000 servo drive, Kinetix 7000 high-power servo drive, and MP-Series integrated linear actuator.



### CompactLogix 1768-L43 Controller

With the ability to control up to four axes of motion, the CompactLogix 1768-L43 controller from Rockwell Automation is ideal for material handling, packaging, metal forming, and other applications requiring speed, motion synchronization, and information-sharing capabilities. The 1768-L43 supports a full range of networks, including DeviceNet, ControlNet, and EtherNet/IP, and uses the same Logix control engine, motion, networking technology, and communications services as the Allen-Bradley ControlLogix and SoftLogix controllers.



Kinetix 7000

### Kinetix 7000 and Kinetix 6000 Servo Drives

With a power output of 15 to 150 kW, the Kinetix 7000 servo drive extends the benefits of Kinetix to a greater range



Kinetix 6000

of applications. It supports three-phase AC input power (380 to 480 VAC) as well as DC input for common bus applications. The Kinetix 7000 handles applications with power requirements of 22 to 112 kW (30 to 150 Hp). Both the Kinetix 6000 and the Kinetix 7000 servo drives feature GuardMotion technology. With its torque-off capability, the drive output is safely disabled to eliminate motor torque. This revolutionary safety innovation allows tasks such as machine setup, cleaning, and jam removal to be accomplished without removing power from the entire machine.

### MP-Series Integrated Linear Actuator

By combining a motor, a long-life ballscrew actuator, and a high-resolution absolute feedback device with a rod-style

electro-mechanical actuator, Rockwell Automation has provided a compact, efficient, and cost-effective alternative to pneumatic, hydraulic, or component-based servo actuators. With the enhanced RSLogix 5000 programming software, users can select and configure the Allen-Bradley MP-Series actuators for their specific application, along with monitoring actuator status. The built-in diagnostics can provide information regarding lubrication intervals, maintenance tasks, and actuator operation - information necessary for maximum uptime and machine life.



For more information about Rockwell Automation's integrated-motion solutions, contact McNaughton-McKay.



## Versatile Circuit Protector Meets North American and IEC Standards

The Allen-Bradley Bulletin 1489 circuit protection device from Rockwell Automation is UL listed and provides 240- and 480-volt branch circuit and equipment protection to meet North American and European standards. This circuit breaker is also approved by CSA to Canadian standards and by VDE to IEC standards.



Versatility is key to the Bulletin 1489's ability to meet varied circuit protection requirements the world over. It also translates into less money and time spent on engineering, building, and using the equipment it supports.

Bulletin 1489 meets UL 489 and CSA 22.2 No. 5.1 standards for branch circuit protection, and also meets IEC 60 947-2 requirements for miniature circuit breakers used in international industrial applications. This device also helps with circuit protection previously only associated with UL 1077, to address the needs of equipment that is installed in electrical control panels. It provides users with circuit protection from 0.5 amps to 40 amps and up to 480 volts.

Bulletin 1489 provides users a safe, reliable option that protects personnel, equipment, and facilities from electrical hazards while meeting evolving application demands and standards.

For more information on the Allen-Bradley Bulletin 1489 circuit protection device, contact a McNaughton-McKay sales engineer.



## The DataMan 7500 Series – A Milestone in Hand-Held DPM Readers

If you've been struggling to find an ID reader that can read codes in an extremely difficult application, look no further. The DataMan 7500 Series of hand-held readers from Cognex are the only industry readers that read everything, from the most challenging Direct Part Mark (DPM) codes to the easiest printed barcodes. These readers perform consistently no matter what type of mark or part is used due to the combination of Cognex's award-winning IDMax code reading software and patent-pending UltraLight illumination technology.



Codes can be read regardless of marking method, part material, shape, or surface texture. They can be produced by dot peen, laser, electrochemical etch, or inkjet marker on any surface, including metal, glass, ceramic, and plastic. Even degraded codes are easily read by the DataMan; it can read practically anything. The versatile, software-controlled UltraLight illumination system changes to optimally illuminate any type of surface. The DataMan can also be used to read 1D bar codes – you don't have to have more than one reader to accommodate your needs.

DataMan hand-held readers are easy to set up and feature a high-performance digital signal processor with a high-resolution image sensor and world-class ergonomics. The omni-directional pitch and skew read path offers greater flexibility in the field, while a visible green light bar allows the user to quickly aim and read the code. The DataMan is equipped with LED and beeper signals to alert the user to good reads, errors, and device status.

Both corded and cordless models of the DataMan 7500 Series are available. The corded model supports USB, keyboard wedge, and RS-232 communications. The cordless model uses Bluetooth communications to connect to the DataMan intelligent base station. The rugged, self-contained units withstand even the harshest environments to provide breakthrough reading of all printed and DPM codes. Manufacturers in the automotive, aerospace, electronics, healthcare, and defense industries will find these readers ideal for implementing part traceability programs.

If you would like more information about these reliable and compact hand-held ID readers, contact a McNaughton-McKay sales engineer.

*Editors note: Products and services discussed in this article are not available at all McNaughton-McKay Electric locations.*



## Fluke Corporation Offers Versatile Insulation Multimeters

Fluke Corporation combined digital insulation-testing technology with all the aspects found in full-featured true-RMS digital multimeters to produce the Fluke 1587 and 1577 insulation multimeters. These two compact, rugged, and user-friendly measurement tools provide cost-effective solutions for both preventive maintenance and



troubleshooting jobs. Fluke 1587 and 1577 insulation multimeters are versatile and include the following features:

- Large display with bright backlight
- Display-hold button
- Insulation test voltages for many applications
- Live circuit detection (voltage >30 volts detected for user protection)
- Auto-discharge of capacitive voltage
- Auto power off
- AC/DC voltage, DC millivolts, AC/DC milliamps, resistance, continuity
- Cat. 3 1000-volt, Cat. 4 600-volt measurement category

The Fluke 1587 and 1577 insulation multimeters have many built-in safety features. Insulation testing is automatically prevented when more than 30 volts are detected, and the location of the probe test button keeps hands away from dangerous currents. Fluke insulation multimeters also prevent discharge of residual voltage. When the test button on the probe is released, residual voltage is discharged. Additionally, the display-hold button allows a user to focus on carefully placing testing probes, rather than on viewing results. This safety feature mitigates the risk of shock.

The Fluke 1587 insulation multimeter offers additional features that may be necessary for job performance. They include:

- Lower insulation test voltages—50 volts, 100 volts, 250 volts
- Insulation test smoothing reading
- Frequency measurement
- Capacitance measurement
- Diode testing
- Temperature measurement
- Minimum and maximum measurement
- Low pass filter (for work on VSDs)

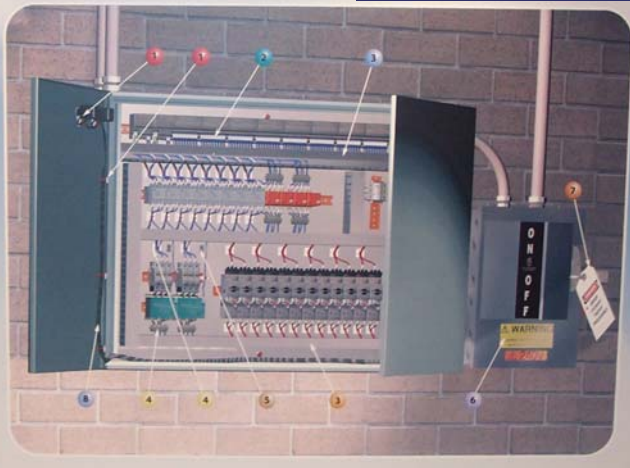
The Fluke 1587 and 1577 insulation multimeters have accessories for a variety of applications. To determine which Fluke insulation multimeter meets your particular need, contact McNaughton-McKay.



## Control Panel



- 1 Metal Control Panel Mounts
- 2 Pin-Tite® Ferrules
- 3 Panduit® Wiring Duct
- 4 Cable Mounts
- 5 Cable Clips
- 6 Identification and Protectors
- 7 Safety Solutions
- 8 Abrasion Protection



## Allen-Bradley SMC-Flex Motor Controller Boosts Productivity, Saves Money

Want to boost productivity while reducing time and money spent on maintenance? Rockwell Automation can help you do just that with the Allen-Bradley SMC-Flex soft-starter with integrated I/O.

The Allen-Bradley SMC-Flex provides two inputs and four outputs, enabling users to control processes and monitor motor systems from the networked soft-starter. Control of industrial processes can move closer to the motor, reducing costs associated with wiring and programming. The SMC-Flex with integrated I/O is designed for a wide range of applications, including conveyers, pumps, and chillers.

The controller's two inputs promote improved process monitoring as well as provide greater access to diagnostic information. This early detection and isolation of potential and actual problems results in reduced maintenance costs and downtime. The four output devices of the SMC-Flex extend its control capabilities to multiple processes, reducing or eliminating the need for auxiliary programmable controllers.



Due to its internal bypass contactor, the SMC-Flex generates less heat and has a smaller footprint than other comparable motor controllers. Reductions in size and cooling requirements result in a unit that easily integrates with other components. The SMC-Flex features replaceable control modules, fans, and power poles, making the unit easy to maintain and service. These replaceable components eliminate the need for stocking complete spare motor controllers, and thus reduce the total cost of ownership.

For more information on how your application may benefit from the Allen-Bradley SMC-Flex soft-starter, please contact your McNaughton-McKay sales engineer.

## Panduit's IndustrialNet Solution

Tired of network conditions in your plant? Are your connections weak? Does network availability ever interfere with production? If so, then Panduit's line of high-performing network cabling infrastructure can help solve these problems.

IndustrialNet enclosures and connectors enable users to widen the range of their traditional networks and provide protection from typical industrial contaminants like dust and water. Once you switch to Panduit network connectivity solutions, you'll never worry about availability or efficiency again.

The IP66 rated IndustrialNet Ethernet enclosure accommodates populated or unpopulated gland plates, includes a power supply with a built-in circuit breaker, and has a vibration mitigating back plate for improved switch integrity.

The enclosure is also 35 mm DIN rail equipped for mounting of hardened industrial Ethernet switch and power supply. It offers four welded mounting flanges and an optional fan/filter kit for high-temperature environments.

The IP67 rated RJ45 bulkhead IndustrialNet TX5e connectors provide ideal solutions where performance and reliability

are crucial and maintaining a constant level of network availability and efficiency is paramount. Besides protecting your connection from the harsh elements, Panduit's TX5e connectors also provide:

- an exceptional return loss margin
- a bulkhead anti-rotation washer
- a bayonet-style interface
- patented GIGA-TX technology
- a universal wiring scheme
- standard mounting.

In addition to these great features, the bulkhead also offers high-temperature protection, keeping you from worrying about your connectivity.

If you're looking to upgrade your industrial network infrastructure, go with Panduit, a world leader in network and electrical solutions. Contact the sales engineers of McNaughton-McKay for more information about network connectivity solutions or Panduit's impressive line of products.



## Energy Efficiency and the Energy Policy Act of 2005

When considering your company's energy use and efficiency, do you find yourself falling into the trap of thinking, "Hey, our building is only seven years old – the electrical fixtures and ballasts must be state of the art?" If so, think again. The truth is that almost all commercial buildings were built before today's energy-efficient products became available. Your relatively new building doesn't have the latest in lighting technology, and that's a problem. Think about your energy use and efficiency once again. Now consider that up to 40% of your electric bill each month is lighting-related. At that cost, do you want to continue assuming your lighting system is top-rate? Of course not. You want answers. Luckily, the Energy Policy Act of 2005 (EPA 2005) offers a few solutions for your lighting-efficiency needs, and the sooner you take advantage of them, the better. But before we explain why, let's learn a bit more about EPA 2005 and what it means to all of us.

EPA 2005, passed on July 29, 2005, establishes a long-term energy policy for the United States. The entire act is over 1,700 pages long and includes hundreds of provisions such as providing tax credits for owners of hybrid vehicles, authorizing subsidies for alternative energy producers, setting reliability standards that regulate the electrical grid, and increasing coal as an energy source while reducing air pollution. The act even stipulates there be no drilling for gas or oil in or underneath the Great Lakes, and it even extends Daylight Saving Time by about four weeks!

Indeed, EPA 2005 is comprehensive and wide-ranging. It leaves few stones unturned. But how does it affect you and your business? What incentives does it offer? And how do you take advantage of these?

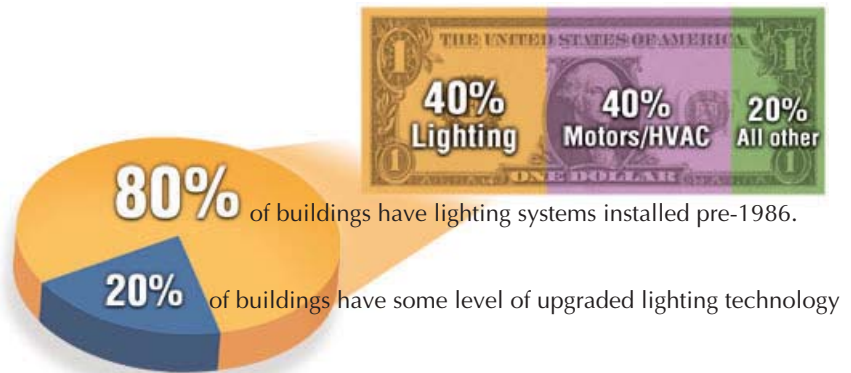
### EPA 2005 and You

Because your building or facility is a couple of years old or more, it's practically guaranteed you're using outdated lighting that doesn't meet the ASHRAE 90.1-2001 standard. This standard was set by EPA 2005. Additionally, the act contains specific lighting-related measures that impact nearly all non-residential buildings. These measures include efficiency standards for lighting products and tax deductions for commercial buildings.

### Efficiency and Lighting

No other system provides potential savings like lighting. Upgrading your lighting is the easiest road to savings through EPA 2005. The lighting-effi-

Lighting represents up to 40% of your electricity bill.  
*Commercial Electrical Use by Technology.*



Fact: most buildings use outdated and inefficient lighting systems.

ciency standards put forth by the act encompass all kinds of fixtures and ballasts currently in use, including:

- torchiere fixtures
- medium screw-base compact fluorescent lamps
- illuminated exit signs
- magnetic fluorescent ballasts
- mercury vapor lamp ballasts

The standards apply to lighting products such as lamps and fixtures manufactured on or after January 1, 2006. Energy-saving magnetic ballasts, however, have to be made on or after January 1, 2009, before the standards apply. And finally, the standards demand that mercury ballasts not be manufactured or imported after January 1, 2008.

Using the latest in lighting technology not only can save you money in efficiency, it can also provide greater savings on maintenance. Lamps and ballasts tend to optimize and support each other's performance, prolonging both products' lifespans and reducing the cost of repair and replacement. As you can see, upgrading the lighting products in your facility can save you money in two ways already, and we haven't even discussed EPA 2005's tax breaks yet.

### Commercial Building Tax Deductions

EPA 2005 offers companies one-time whole-building tax breaks of up to \$1.80 per square foot for many different electrical upgrades, including lighting. These tax breaks can be applied to newly constructed buildings or renovations. In this way, the act rewards companies that use energy-efficient products. Qualifying for these deductions is easy, too. Simply purchasing certain energy-efficient products, like lighting, can qualify your company for the deduction. And a partial deduction of \$0.60 is possible when the ASHRAE 90.1-2001 standard is surpassed by a lighting or HVAC system.

The best part about these upgrades and related deductions is that they deal with lighting systems, which are typically costly (as we've seen) but can be renovated with much less trouble than other building or plant systems. So what does this all mean to you? Put simply, increased lighting efficiency coupled with tax breaks means energy and cost savings for your business.

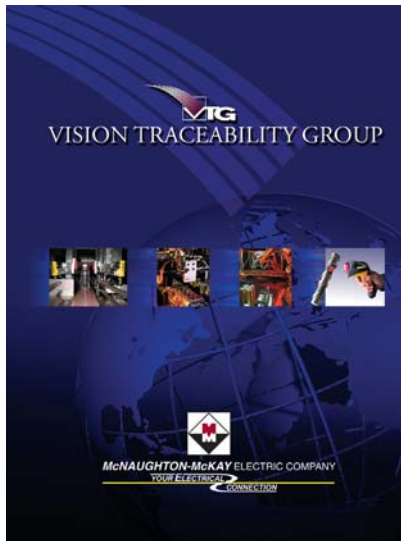
### EPA 2005 Benefits—When and How

Increased efficiency and decreased taxes are available thanks to EPA 2005; however, the tax breaks won't be available forever. There is a two-year period for taking full advantage of the deductions, from January 1, 2006, to December 31, 2007. Any property placed in service between these dates is eligible for savings. But remember, there are two different deductions: the one-time whole-building deduction of up to \$1.80 per square foot (when the ASHRAE standard is surpassed by at least 50%) and the single-system partial deduction (when the standard is surpassed by 25-40%).

With either deduction, your company's energy and maintenance costs will also decrease. And helping you realize these costs are the ballast products of Advance Transformer. As the leading manufacturer of ballasts and drivers for fluorescent, HID, and LED lamps in North America, Advance has built a reputation for reliable, high-quality products and extensive technical expertise.

To identify the opportunities Advance products offer for the upgrading or renovation of lighting in your plant or building, and to begin taking advantage of the EPA 2005 tax breaks, contact a McNaughton-McKay sales engineer today. If you would like to learn more about how EPA 2005 affects your lighting systems and controls, log on to [www.energybillinfo.com](http://www.energybillinfo.com).





## McNaughton-McKay Vision Traceability Group

McNaughton-McKay's Vision and Traceability Group (VTG) can provide you with solutions in the areas of quality control, error proofing, traceability, and flexible manufacturing. The VTG was created to provide expertise in vision and traceability, a lean manufacturing core competency.

The VTG brings the power of McNaughton-McKay to offer you a complete range of solutions by combining vision expertise with a full product line of smart, online inspection equipment. The VTG offers automation solutions for manufacturing a diverse range of products

including robotic guidance, electronic boards, fasteners, pharmaceuticals, packaging, tire and wheel assemblies, and all stages of automotive components. VTG solutions will bring you results: increased efficiency, reduced downtime, improved quality, and reduced risk. Whatever the application, the VTG has someone who can help you optimize it.

The VTG brochure will tell you more about why you need the VTG and how McNaughton-McKay can help you find the right solution. For more information, contact McNaughton-McKay and request a free copy of MCMC PUB 8001.



[www.mc-mc.com](http://www.mc-mc.com)

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