the CONNECTION

KENDALL ELECTRIC INCORPORATED

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Automation Fair Review

The 20th Anniversary of Rockwell's Automation Fair® was a fantastic event this year with over 12,000 people attending and over 125 exhibitors. Attendees had a great opportunity to explore a wide variety of smart, safe, sustainable manufacturing solutions geared toward improving business profitability. There were many new products introduced at the show along with a glimpse of some future developments.

"Automation Fair has always been unique: it provides great learning opportunities, nonstop networking, and a show floor that's like being inside the biggest automation experience on the planet," said Keith Nosbusch, chairman and CEO, Rockwell Automation. "Together with our PartnerNetwork companies, we help customers gain fresh insights and new solutions to their manufacturing and automation challenges. For 20 years, it has been the world's best value in automation education."

As we move into 2012 and the economic recovery continues, Rockwell Automation and Kendall Electric, Inc. will continue to introduce and offer products and solutions to help you succeed at manufacturing, building automation equipment, and many other aspects of your business.

Kendall Electric, Inc. would like to thank all of our customers and partners that participated in this year's show. We hope that the information gathered was valuable to you and will be beneficial to you in the investments and decisions you make in the upcoming year. If you missed the show, or are looking for further information from the event, then check out the following 3 links.

For video segments go to YouTube. The link is: http://www.youtube.com/ROKAutomation.

For presentations go to Slideshare. The link is: http://www.slideshare.net/RockwellAutomation/presentations

For additional information on new product announcements and other information that was presented at Automation Fair go to the Press Room. The link is: http://www.rockwellautomation.com/events/automationfair/press/

Be sure to mark your calendar for next year's Automation Fair event. Automation Fair 2012 will be in Philadelphia, PA on Nov. 7-8, 2012.

Kevin Geesin
Automation & Control Sales Manager
Kendall Electric, Inc.

Introducing Dan Pelton

by Kevin Geesin - Automation Sales Manager, Kendall Electric North

Kendall Electric would like to welcome back a past owner-associate to our Kendall Electric family at our Saginaw location. Dan Pelton has taken over the responsibilities of the Automation Specialist for PLCs, HMIs, Software, and Vision for our Saginaw area customers. His name may be familiar to many of our customers because Dan's career started with us as a co-op student during his college education.

Dan grew up in the Southwest corner of Michigan. He is the oldest of three boys and has many fond memories of growing up near Lake Michigan and enjoys going home to visit whenever possible. During his school years, Dan was involved with the Math and Science Center. It was with that involvement that Dan knew engineering was in his future. Upon graduating from high school, Dan choose to pursue an engineering degree at Kettering University (formerly GMI) in Flint, Michigan.

As part of his engineering curriculum at Kettering University, Dan was assigned as a co-op student to Kendall Electric. During his co-op years he was able to spend quality time at multiple Kendall locations, including: Battle Creek, Benton Harbor, Grand Rapids, Lansing, and Saginaw. As with all lot of our hires, Dan's responsibilities began in the warehouse, but he quickly moved to counter sales, inside sales, trainer, and inside high-tech sales support.

After graduation, Dan decided to venture out to try the new skills he learned at Kettering and polished with us. Dan spent 9 years as a Controls Engineer with Assembly Technology and Test in Saginaw, Michigan. There he worked with many companies that helped enrich his understanding of different machines, hardware, software and general system knowledge. As Dan's engineering ability grew he earned the respect of all the companies he worked with. Dan enjoyed being their "go-to" guy, earning him the nicknames "Dr. Dan" and "Mr. Roboto".

In an attempt to test his skills as a Manufacturing Engineer, Dan worked at both Nexteer Automotive (previously Delphi Steering Gear) and Dow Chemical. It was during his time at Dow that our Automation Specialist position for the Saginaw market became available. Dan, understanding the magnitude of this opportunity accepted the position just as his predecessor, Randy Carlson, was moving to fill a similar role that opened in our greater Grand Rapids - Kalamazoo market areas. During the years after graduation, Dan remained a regular customer to Kendall Electric and during that time he was able to work closely with Randy.

Dan has a young family. He and his wife have been married for 8 years and they have two young children, ages 1 and 3. Having two children so close in age helps keep Dan on his toes, but he enjoys every minute with them. He also enjoys playing sports and following his favorite teams, watching movies, and keeping up with the latest techno gadgets. Dan enjoys traveling both domestically and internationally having visited three different continents for both work and leisure.

Like most engineers, Dan enjoys taking a concept and developing it into a fully functioning machine. He has designed hardware, developed software, and has started up small and large-scale machines. For Dan, the best part of the new job at Kendall is the interaction he will have with his customers and the pride he takes in being able to help them. Whether it is helping with the development of new equipment, helping to lay out a controls scheme, or a quick visit to assist at identifying the best possible solution to a problem, Dan enjoys being there for his customers. He looks forward to the opportunity to work with all of the Saginaw area customers and welcomes all the challenges and opportunities presented to him.

Checker 3.2 Software and Checker 4G7X

by Andy Atherton - Automation Specialist, Kendall Electric - Grand Rapids

Cognex has released a new version of Checker software and a new Checker model that will greatly expand the inspection capabilities of the Checker 4G family.

First the Checker 4G7X (p.n. C4G7-24X-E00) is a step up from the standard 4G7 as it will allow the use of all sensor types simultaneously rather than limiting sensor selection to a single sensor type. As with the other Checker 4G models it comes with an integrated white LED ring light, Ethernet communications, built in ladder logic functions, and four high speed outputs. The integrated ring light is removable and optional light modules in red, green, ultraviolet, and infrared can be installed. Colored band pass filters, as well as a polarizing window, are also available to enhance the contrast and ambient light rejection in your application.

The additional capabilities of the Checker3.2 software are also exciting. This version was designed to work exclusively with the Checker 4G family and sup-

ports the new 4G7X.

The software includes a new Edge Sensor in the Presence set of sensors. This sensor will detect the presence of edges and provides controls of light to dark, dark to light, or the "either" transition. Additionally an angular tolerance can be chosen, from a preset list with a tolerance of up to plus or minus twenty degrees of rotation; angular tolerance can be disabled alternatively. The Pattern Sensor in the Presence set of sensors now has a selection which adjusts the accuracy of the pattern match algorithm. The selection can be set to more accurately find the pattern, but higher accuracy takes more time. The other setting is to use less accuracy to find the pattern, which, in turn, takes less time. The ability to select the level of accuracy offers more flexibility for the duration of inspection depending on which aspect is more important.

A new set of sensors has also been added under the heading of **Position**. These include a Pattern Sensor, an Object Sensor and an Edge Sensor. The Pattern Sensor learns a pattern and through the size of the search region (user set with adjustment in both axis) will pass if the pattern is in the search area, or fail if it is not. Additionally a continuously adjustable angular tolerance (plus or minus 180 degrees) can be set as a criterion for pass or fail. The Object Sensor

finds objects of non-descript shape or size (blob). As with the Pattern Sensor , through the size of the search region, the sensor will pass or fail based on the location of the object in the search area. The Edge Sensor will detect edges in the search region and also has an angular tolerance criterion (limited to plus or minus twenty degrees) for pass or fail.

Other new features to the software are the ability to know FTP images WITH graphics, 24 inputs and outputs over EtherNet/IP and ProfiNET, a selectable strobe output for synchronizing an external light, a job profiler to monitor the amount of time used for each sensor, user and administrative password protection, and a .NET Software Development Kit (SDK).

The .NET SDK supplies connectivity to data and controls in the Checker that can be implemented in a .NET capable application like Visual Basic or C# for custom HMI development. The software and .NET SDK are free downloads from the Cognex website. The Checker 4G's previously running an earlier version of the software can be firmware updated to the new software.

Contact your Kendall Electric Account Manager for more information about the Cognex checker 4G7X and 3.2 software.

ECO-BAY, A Fluorescent High Bay Alternative

by Davey Robison - Account Manager, Kendall Electric - Battle Creek

As most in our industry know, 400 watt metal halide high bay fixtures have become a thing of the past. When first introduced, the fixtures were thought to be very efficient and productive, creating 36,000 lumens per fixture. Although they punch out a lot of light when new, the lamp has a rapid light output depreciation rate, therefore dimming quickly and becoming even more inefficient. Because of this, you have to frequently re-lamp these fixtures simply to maintain the desired light level in a work area. Depending on the usage and the number of fixtures, untimely re-lamping can add significant additional cost to the well documented high cost of operation attributed to wasted energy.

Various utility rebate programs are known to incentivize businesses to replace these inefficient fixtures with new and improved ones. For the most part, T8 and T5 fluorescent fixtures are replacing the 400w metal halide fixtures, resulting in longer lamp life and significant energy savings. However, fluorescents are not the only energy savings alternative.

Hubbell Lighting has introduced a new high bay with electronic HID technology. This fixture has been designed to be a "one to one" replacement of the standard 400 watt MH fixtures.

The standard 400 watt metal halide fixture is rated at 455 input watts. The ECO-BAY is rated at a total input wattage of 213 for the entire fixture. That is less watts then a 6-lamp T8 fixture with a high ballast factor, which is rated at a total of 220w.

For instance, let's do a "one to one" comparison of the 400w MH vs.

the ECO-BAY. Based on a "lights on" schedule of 24 hours per day, 7 days per week. The operating hours will equal 8,760 hours annually. For this example, we will cost our energy at the national average of $.10/kwh. Based on these numbers, each ECO-BAY will generate a an annual savings of $212 just on energy.

Some other key advantages, besides the huge energy savings are:
- Easy installation
- Universal voltage
- Low maintenance
- 90 CRI
- Temperature stability
- 5 yr ballast warranty and 1 yr lamp warranty

The ECO-BAY can be ordered as a unit pack: 200w electronic ballast housing, 14" or 22" reflector, 200w PS lamp, and the hook loop.

For further information such as price and availability please contact your Kendall Electric Account Manager or inside sales staff. We will be more than happy to assist you with any inquiries of the Hubbell ECO-BAY.

400w MH	ECO-BAY 200w MH pulse start
455watts = .455 Kilowatts	213watts = .213 Kilowatts
.455 kilowatts X 8,760hrs = 3,985.5kwh	.213 kilowatts X 8,760= 1,865.88kwh
3,985.5kwh X $.10kwh= $395.58 per yr.	1,865kwh X $.10kwh= $186.58 per yr.

Tech Connect - Training Advisor

by Bob McCormick - Account Manager, Kendall Electric - Three Rivers

Do you currently have a Tech Connect Contract with Rockwell Automation? If so, did you know that your contract provides you with access to a feature called the Training Advisor? The Training Advisor is a great tool used to assess the knowledge of your work force. Once the assessment has been completed, you can use what you have learned to build a tailored training plan for your employees with an expert online consultant.

The Training Advisor is a great tool for maintenance personnel that are already very strong in one area, but may need further training in another. Training Advisor will help you take the guess work out of determining your department's training needs.

Having an accurate assessment for each training candidate is beneficial when it becomes time to justify the need and the cost for technical training. The best value comes from a comprehensive training package, that is specific to the areas that are important to your business.

With Training Advisor, you will be able to customize your assessment based on the family of products that you maintain and service regularly, product families that include high tech equipment like:

- Controllers
- Networks
- Motion Control
- Drives Control
- Safety Networks
- Visualization
- Process Control
- General Industrial Control
    (Includes pneumatic)

Once your personnel have completed an assessment, you can use the results to help identify individual training areas, which can be fulfilled with standard Rockwell open-enrollment courses or tailored courses that focus directly on your specific needs.

It is easy to get started with the Training Advisor. In the Tech Connect packet that you received, there is a form with your contract number and a link to the Training Advisor page on the Rockwell web site. On the web page you will see an icon named "New Training Advisor". Select it and follow the directions.

For additional information on Training Advisor visit www.rockwell-automation.com/services/training, or ask your Kendall Electric Account Manager.

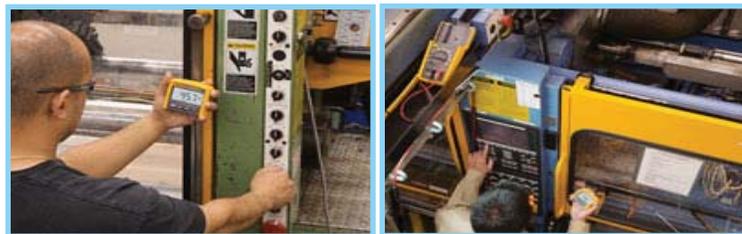# Fluke 233 True RMS Remote Display Digital Multimeter

by Mike Iciek - Account Manager, Kendall Electric - Lansing

Fluke 233 is the world's first wireless digital multimeter

Using a digital multi-meter has at times become a two man job, especially when working in the field and around large machines. It is not uncommon to see one person reading the display while the other is holding the meter leads at a hard to reach electrical termination point. Safety often becomes an issue because the person on

work in two places at once.

With the Fluke 233 wireless remote display multi-meter you will not need the assistance of a second person when trying to read the display. This meter makes it easier to take electrical measurements in hard to reach areas. This meter will make your job easier when testing electrical circuits.

Tech Specifications…
- Measures up to 1000V AC & DC
- Measures up to 10A
  (20A for 30 seconds)
- Thermometer
- Resistance / continuity
  and diode testing
- Auto power off
- Easy to read display with backlight
- Uses standard AA alkaline battery
  (for meter and display)

the ladder is trying not to get tangled up in the long test leads. Kendall Electric is now stocking the Fluke 233 digital multi-meter. This meter uses a 2.4 GHz wireless transmitter to send real time measurements to the detachable display. By sliding the display out of the meter body, the technician can place the display where it can be easily seen (up to 33 ft. from the meter). The display comes with a magnet on the backside, ideal for fastening it to a steel enclosure when trouble shooting electrical problems. Now a technician can

For more information on the Fluke 233, please contact your Kendall Electric location and/or your account manager.

Panduit IndustrialNet™ Physical Infrastructure Solution

by Gary Marret RCDD - Telcom/Data Specialist, Kendall Electric - Fort Wayne

Today's automation systems depend on Industrial Ethernet for real-time control, device configuration, data collection, and even safety sub-systems. The productivity of the manufacturing plant is dependant on the industrial ethernet network that includes software, hardware, and the physical infrastructure. The hardware and physical infrastructure are the physical layer of the industrial ethernet network. The physical layer is the lowest, but most critical layer. The physical infrastructure is comprised of the connectivity, enclosures, pathways, and grounding and bonding that provide the critical channels for communication to exist.

Panduit provides an end-to-end cabling physical infrastructure solution. The Panduit IndustrialNet™ solution is a reliable high performance network cabling infrastructure designed to support industrial networking applications in harsh factory environments. It will also ease the deployment of industrial networks and automation control systems within the manufacturing floor.

The following are just a few of the products available.

IndustrialNet™ Mini-Com DIN Rail Mount Adapter
Mounts to standard 35mm DIN rail and accepts any single port Panduit Mini-Com module.

IndustrialNet™ Automation Bracket
Industrial Automation DIN rail bracket allows automation equipment to be mounted in 19" EIA racks or enclosures.

IndustrialNet™ TX and Fiber Optic Connectors, Couplers, and Plugs
Category 5e/6 RJ45 and Fiber Optic bulkhead products provide IP67/IP65 seals. They also meet industrial ethernet specifications from ODVA, TIA, and IEC.

IndustrialNet™ TX and Fiber Optic Patch Cords
Category 5e/6 patch cords constructed of industrial grade cable that provide a IP67/IP65 seal when mated with Panduit IndustrialNet TX connectors or couplers. They are available with or without dust caps.

IndustrialNet™ Data Access Port
The data access port provides a safe and secure means to maintain and monitor performance of PLC's, VFD, and industrial networks. It allows access by non-arc flash certified personnel reducing cost, increasing efficiencies, and promoting overall safety. It includes a GFCI and TX5e coupler module.

If you need additional information or assistance on choosing the proper product for your application, please contact your Kendall Electric Account Manager or Telcom/Data Specialist.

DIN Rail Adapter:
CADIN1IG

Security mounts to standard 35mm DIN rail within a control panel or enclosure and accepts any single-width Mini-Com Module to terminate cable or patch cords.

DIN Rail Switch Mount Bracket:
IABDIN4

Allows DIN rail mountable equipment to be mounted in a 19"EIA rack or cabinet.

Data Access Port with GFCI and Category 5e Coupler:
IAPNG5EWH

Modular solution accepts all Mini-Com® Modules for design flexibility.

Bulletin 4983 Surge and Filter Products

by Jim Waslawski - Account Manager, Kendall Electric - Traverse City

Are you protecting your investments from transients and electrical noise? To address your industrial power quality needs Rockwell Automation offers the Bulletin 4983 line of Surge and Filter Products.

First let's review some terms:

Transients (Surge)
A short term deviation, that is a high energy change from your desired voltage levels.

Electrical Noise
Unwanted interference due to voltage and current anomalies.

Surge Protective Devices (SPD)
The classification of devices designed to react quickly to sudden and momentary over voltage conditions.

> UL1449 Revision 3 divides SPD into 4 categories, ICE divides it into 3; this depends on the intended area of usage and the suppression capabilities.

Filter
Attenuates specific unwanted frequency or a range of frequencies allowing the desired signal to pass.

Cascaded Architecture
Multiple points of successive downstream protection with the highest level of protection at the service entry and the lowest at the point of use.

What is the source of the transients and electric noise? The most common thought that comes to mind centers on lightning, which can be a very destructive form of high voltage transients and electric noise. Utility companies also create noise and transients throughout their daily operations. An often over looked source is found within our own operations; arc welders, connection breakdowns and failures, the starting of motors and transformers, variable frequency drives, and power factor correction capacitor banks all contribute. In our offices such equipment as; copiers, exhaust fans, air handling systems, and electronic ballast also contribute to the level of electrical transients and noise within a facility.

So how do we protect our plant floor investment?

Bulletin 4983-DD, is a DIN rail mountable Dataline Surge Protection device, which uses three electrode gas discharge tubes and fast clamping diodes. Applications for the 4983-DD include; I/O cards probes, actuators, displays, and processing equipment. This offering includes 4-20Ma loop RS232 type and LAN RS485/RS422.

Bulletin 4983-DH is a DIN rail mountable, heavy duty AC surge protection device. The 4983-DH would be installed at the point of service in a cascaded architecture. The DH units combine a MOV network with gas discharge tubes to increase performance in protection and extended life. Visual fault indication as well as remote

signaling are some of the features in the DH. The available voltage ranges are from 120 to 480, with a 277/480Y AC network unit also available.

Bulletin 4983-DC consists of 4 basic parallel surge protection devices and uses MOVs to clamp high voltage surges. The DC offers protection for single and 3-phase systems. It also provides visual and remote monitoring that indicates the unit has reached "end of life", or when an extreme condition has taken place and an inspection is in order. Voltages include 120 through 480.

Bulletin 4983-PF is a device used for providing clean power in a series application. The 4983-PF utilizes the Islatrol™ Filter Technology designed for low level voltage transients and high frequency noise. The PF units are typically placed ahead of PLC's, motion controllers, and computers in industrial environments.

Bulletin 4983-DC combines surge and filtering into one protection device, meeting both UL-1449 and UL-1283. The 4983-DC also utilizes the Islatrol™ Filter Technology and is designed to protect against transients and noise. AC networks include 120v and 240v, DIN rail mount, LED power indication, and a form C contact for remote status indication.

Contact your Kendall Electric Account Manager for additional product information, specification sheets, and product literature. They can also provide you with access to an informative video on the Bulletin 4983 Surge and Filter solutions which cover the entire series of products in detail.

Phoenix Flexible Gooseneck LED Docklite

by Don McSween - Account Manager, Kendall Electric - Grand Rapids

Are you getting tired of replacing lamps in dock lights because the high heat incandescent floods or MR16s constantly snap their filaments when bumped…..or just plain burn out due to their short lamp life? Are your maintenance electricians wasting time changing light bulbs when their skills should be used on higher priority items? Has management given you initiatives to save electricity and find longer life products that will minimize the weekly trash haul and the need for recycle bins? If so, Phoenix has just introduced a new light fixture that is a solution to these issues.

The Phoenix Flex LED Docklite is an ultra flexible dock light that is designed to provide comparable light to that of a 150W PAR38 flood lamp. The sleek and light weight fixture has a snakelike design that allows the luminaire to be pointed in various directions while the wall mount bracket arm provides a full 180 degrees of rotation for the entire Flex LED. The compact design minimizes the likelihood of a unintentional impact with an overhead door or a fork truck, and if impact does occur, the flexible gooseneck allows the fixture to swing out of the away. As an added benefit, the polycarbonate housing resists denting, even in cold weather. The Flex LED's solid state circuitry has been designed to withstand the occasional impact which helps to justifying its low maintenance claim.

The LEDs of the dock light have an average rated life of 50,000 hours in comparison to a 150WPAR38 lamp life of 2500 hours or a MR16/

150W lamp life of 500 hours. The yearly lamp replacement cost alone dwarfs the initial install cost of the Phoenix Flex LED Docklite. Add the time to replace each lamp and the Flex LED becomes a very attractive energy and cost savings solution.

A local manufacturing company that recently started using the Flex LED found that they had replaced 230 MR16 dock lamps throughout their facility during the prior 23 months. When calculating the cost, they determined that the maintenance time to replace a single lamp was one hour. Consider the time it takes an electrician to locate a lamp, walk to the dock, replace the lamp, and then dispose of the lamp in the proper recycling container.

Like other LED fixtures, the Flex LED offers a significant energy savings when compared to traditional lamps. The power consumption of the Flex LED is a mere 16 watts, which equals an energy savings of 84% over the PAR and MR lamps. Depending on your energy cost and hourly wage rate, the Flex LED's low maintenance requirements and energy savings should provide you with a rapid return on your investment. Also, be sure to check to see if your local utility is offering LED conversion incentives, as many are.

Ask your Kendall Electric Account Manager for more information on the Phoenix Flex LED Docklite. You will be happy you did.

RAB Introduces the New ALED78 Area Light

by Jeff Phillips - Account Manager, Kendall Electric - Lansing

Rab Lighting has been an innovator in the LED market for the past few years and now has come up with a 78 watt LED area light that replaces a 250 watt metal halide. This fixture is ideal for parking lots for mounting on a pole up to 20 ft high. A typical 250 watt metal halide draws about 285 watts, while the ALED78 total input watts are 91. That equates to a nice savings over a year's time.

Some features of the RAB ALED78
- Available in 2 LED light sources, Neutral & Cool
- 3 types of light distribution
- 6 multi-chip 13 watt, high-output LED's
- 50,000 hours rated life
- a 5 year warranty

The RAB ALED78 is approved by the Dark Sky Association as a full cutoff, fully shielded luminaire and would qualify to achieve LEED credits for light pollution reduction.

The ALED78 is but one of a long line of new LED products RAB Lighting has introduced over the past few years. Please contact your Kendall Electric Account Manager to learn more about other RAB products such as the LPACK52, which replaces a 250W metal halide wall pack, and the FFLED39 or FFLED18, which replace 150 and 70W metal halide floodlights. You can access more information on all the new RAB products at: www.rabweb.com, or request a sample from your Kendall Electric Account Manager.

Bulletin 1489-D Circuit Breakers

by Paul Osborn - Account Manager, Kendall Electric - Fort Wayne

Protecting your critical equipment is an essential, but often neglected business practice. We would never install electrical circuits in our homes without circuit breaker protection. When your lights go off at home, you make a trip to your trusty breaker panel to see if any of the breakers have tripped. If you find one, you reset it and power is restored. Many fail to consider that the biggest benefit breakers provide is that your electrical circuits are protected, making your home safer and protecting your investments which could cost thousands of dollars.

The same logic applies in your workplace and even your DC powered equipment. Allen-Bradley's new Bulletin 1489-D Circuit Breakers offers the protection you need for your DC powered components up to 40 amps. This will allow you to protect your expensive DC powered equipment at a very affordable cost.

The 1489-D is specially designed for higher voltage DC circuits with a permanent magnet to direct any arc into the arc chute splitters. The 1489-D is UL 489 rated. It also provides safe operation with IP2x finger protection and superior shock and vibration resistance to help prevent nuisance tripping. The Positively Trip-Free Mechanism is another added safety feature as the breaker cannot be defeated by holding the handle in the on position.

The 1492-D mounts simply on a DIN rail and offers field mountable options for selective applications. Standard current ratings are offered from 2 to 40 amps. The unit combines thermal and magnetic trip actions that provide accurate overload and short-circuit protection for both the conductors and connected equipment. The 1492-D has a 10ka interrupt rating and is also available in miniature units for IEC Applications. Units are available in one or two pole models.

Region	Number Poles	Max. Voltage	Current Range [A]
EN/IEC Regions	1-pole	250V DC	2 to 40
	2-pole	500V DC	2 to 40
North America (UL 489 & CSA C22.2 No. 5)	1-pole	125V DC	2 to 40
	2-pole	250V DC	2 to 40

The Bulletin 1489-D Thermal Magnetic Circuit Breakers are general-purpose devices suitable for the majority of industrial, inverse time circuit breaker applications. For more information about the new 1489-D Circuit Breakers, contact your Kendall Electric Account Manager.

800B 16 mm Push Buttons

by Gary Waldron - Account Manager, Kendall Electric - Fort Wayne

Original equipment manufacturers (OEMs) and end users needing compact, reliable push buttons for light industrial and instrumentation applications can take advantage of a new 16 mm line from Rockwell Automation.

The Allen-Bradley 800B 16 mm Push Buttons help reduce maintenance and associated downtime costs with LED pilot lights that will indicate that a motor is in operation and provide a trigger-action emergency-stop (E-stop) device that will cease motion. The E-stop Push Button features a trigger-action anti-tease to help ensure the E-stop command will disengage equipment, helping to improve worker safety. Push Buttons are often taken for granted, but they are the first line of defense against very expensive malfunctions. They must stand up to repeated use and the punishment of being constantly exposed to harsh industrial environments.

The 800B line provides reliability by meeting global standards, including UL, CSA, CE, CCC and RohS. The entire family is constructed of durable corrosion-resistant plastic materials that provide dependability in sealing (IP65/66) and help to extend the over all product life. For improved visibility and comfort, the 800B devices offer bright, consistent illumination with an ergonomic concave shape.

800B 16 mm Push Button users benefit from the low-voltage, gold-plated contact blocks and LEDs with leakage current shunt. Both help improve I/O signal quality and operation uptime. The new 800B product line takes many of the features of Allen-Bradley 22.5 mm and 30 mm push button families and puts them in a 16 mm size design. This provides users the flexibility to precisely match their control parameters and the available space.

For more information on the Allen-Bradley 800B Push Buttons, you can visit: **http://www.ab.com/industrialcontrols/products/push_buttons/** or contact your Kendall Electric Account Manager.

WorldProx™ Long Range Inductive Sensors

by Tracy Wilson - Account Manager, Kendall Electric - Angola

New Sensors Offer up to Three Times the Range of Standard Sensors

With such a variety of inductive proximity sensors on the market, how do you know which one is right for your application? Target size, shape, and material, along with operating temperature, power requirements, and surrounding metals should all play integral parts in your selection process. Failure to consider any of these factors could lead to application difficulties or unstable sensor operation. One way to help in your selection is the new Rockwell Automation long range inductive sensors. The 872 WorldProx™ family of proximity sensors will help make your applications simpler while addressing the market's ever changing sensor needs.

Rockwell Automation is your single source to consolidate products under one reliable vendor. Designed with patented, cutting-edge technology, the new 872C WorldProx™ sensor family offers up to three times the sensing range of standard sensors and is able to overcome the challenges of maintaining consistent sensing over varying temperature ranges. Available in 6.5, 8, 12, 18, and 30 mm diameter housings with sensing ranges up to 40 mm, these sensors are an excellent choice for a wide range of applications and environments.

Features
- 10 to 30V DC Operating voltage
- 6.5 mm (smooth barrel)
- 8 mm, 12 mm, 18 mm, and 30 mm (threaded barrel)
- Shielded and unshielded versions (6.5 mm shielded only, 8 mm unshielded only)

- Up to three times the sensing range of standard inductive sensors
- PNP or NPN units (all units normally open)
- 3-pin Pico QD or 4-pin micro QD connectors
- -25...+70° C operating temperature
- IP67 enclosure rating
- Short circuit, false pulse, reverse polarity and transient noise protection
- cULus and CE marked for applicable directives

Benefits
- The most common cause of sensor failure is contact with the intended target. Sensors with a longer range can be used to eliminate and/or limit contact with the target, thus reducing the cost associated with replacing damaged sensors (cost of the sensor, maintenance time, and lost production).
- Achieve the same sensing range with a smaller sensor. Smaller diameter sensors may be a superior physical fit for your application. Additionally, you may now be able to use a sensor in a previously inaccessible area.
- Solve previously unsolvable applications, especially in difficult environments where other sensors may not be reliable.

For more information concerning the 872C WorldProx™ sensor family please contact your Kendall Electric Account Manager or our Industrial Control and Safety Product Specialist.

Wireless Comes to Lighting Control

by David Lockwood - Account Manager, Kendall Electric - Saginaw

Is there any way to control the lighting in your older facility? Yes, there is a way available today. The wiHUBB system from Hubbell Building Automation is a wireless control system that is suitable even for an older plant. As we continue to look for ways to reduce our operating costs, controlling and managing a facilities energy use is just one of the ways a company can save money. By applying and utilizing this wireless technology you will gain individual room lighting control, step dimming, continuous dimming, and even time-based occupancy scheduling of your facility. All of this can be accomplished without the need for extensive, and expensive, rewiring. You may also elect to integrate the HVAC, fire and security systems, or even set up demand response programming to shed low priority electrical loads during times of peak energy consumption.

wiHUBB uses SNAP (Synapse Network Appliance Protocol) which creates a secure peer to peer, self-organizing and self-healing mesh network. A total of 64 areas, 64 zones per area, and 16 groups per zone are available on a single network. The wiHUBB system can be programmed using any standard web browser with just a few clicks of your mouse.

The wireless modules can be ordered factory installed with any of the Hubbell Lighting brands as well as loose modules that are suitable for retrofit. The module even provides a sound solution for outdoor applications. Outdoor fixtures are easy to retrofit using the on-fixture module. To get you started, HBA offers a no-obligation, walk-thru of your building or campus; set one up today!

This wireless technology has really lit up! Hubbell Building Automation has occupancy/vacancy, daylight harvesting, switch stations and even retrofit kits for existing fixtures. Try it and apply it in your warehouse or office today.

For more information talk to your Kendall Electric Account Manager, or visit HBA on the web at: www.hubbell-automation.com.

Rockwell Automation CENTERLINE® 2100 SecureConnect

by Kevin Silver - Automation Engineer, Kendall Electric - Chattanooga Area

Help Reduce Exposure to Electrical Shock and Hazards.

To further help improve the safety in work environments, Rockwell Automation has released CENTERLINE® 2100 Motor Control Centers with SecureConnect option to help increase protection of personnel servicing motor control center buckets.

By utilizing SecureConnect, you can disconnect the power from an individual MCC plug-in unit without opening the MCC bucket door keeping you away from the arc flash boundary increasing personnel safety. This feature addresses the growing concern of working inside the arc flash boundary on live equipment. This feature also electrically isolates the equipment that needs servicing without impact to other operating equipment powered from the motor control center.

The power stabs, located on the back of the SecureConnect unit, connect the individual unit to the MCC vertical bus to establish power. When turning the handle on the front of the unit to the "Off" position, the power stabs disengage and retract inside the power stab housing. After the power stabs are securely inside, the stab housing shutters close and power removal can be verified with a multi-point validation system, This multi-point electrical and mechanical system indicates that the unit is disconnected from the vertical power bus by using indicators on the power stab housing shutters. Power stab withdrawal and the actuator indicator port all help to confirm that voltage has been disconnected.

The spring-loaded mechanical actuator indicates whether the unit is connected or disconnected. After putting the handle to the "off" position, the port door can be moved over to expose the port. Using a simple ¼ hex driver and socket wrench, you can validate that power is disconnected from the unit. The indicator above the port will provide the necessary feedback to the operator. Red indicates that power is connected while green indicates that power is disconnected. There is also a continuity check between all three stabs once they are inside the power stab housing. This can be checked using the test port on the front of the unit without opening the door or on the remote operator.

When the Disconnect Operator is in the "Off" position, a mechanical lock-out can be applied to prevent the stabs from being placed in the connected position

Adding a remote operator to the front of the SecureConnect unit allows you to work outside the arc flash boundary of the MCC while connecting and disconnecting the unit stabs. The 24V DC motor and operator device allow for operation up to 30 feet away from the MCC unit. This reduces exposure to hazardous voltage or potential arc flash hazards.

There is no impact to the Space Factor of units and SecureConnect can be applied to select units or all units in the MCC line-up. Retrofit kits will be available through Rockwell's Customer Support & Maintenance field service engineers.

For more information contact your Kendall Electric Account Manager or one of our MCC Automation Engineers.

The power stabs, located on the back of the Secure-Connect unit, connect the individual unit to the MCC vertical bus to establish power.

Port door closed

Port door open

Actuator Position Indicator and Tool Insertion Point
The spring-loaded mechanical actuator indicates whether the unit is connected or disconnected. After putting the handle to the "off" position, the port door can be moved over to expose the port.

Using a simple 1/4 hex driver and socket wrench, you can validate that power is disconnected from the unit. The indicator above the port will provide the necessary feedback to the operator. Red indicates that power is connected, while green indicates that power is disconnected.

Allen-Bradley® Training Schedule

Because of the complexity industrial control that is currently being installed in factory automation, the need for a thorough understanding and knowledge of equipment is imperative to keep your company productive and profitable. Training from Allen-Bradley can reduce downtime because employees trained on equipment can solve problems faster. It also maximizes utilization of equipment because personnel knowledgeable about all performance capabilities of equipment will use those capabilities to the best advantage and potential. Additionally, Allen-Bradley's training increases worker participation towards your company's goals and objectives. Many productive suggestions for solving ongoing problems and increasing productivity come from workers who fully understand control equipment.

Course Title	Course	Days	Cost	Troy (MI)	Wayland (MI)	Fishers (IN)	Fort Wayne (IN)	Burr Ridge (IL)	Nashville (TN)	Atlanta (GA)
CONTROLLOGIX/ RSLOGIX 5000										
RSLogix5000 L 2: Basic Ladder Logic	CCCL21	2	$1,125	1/12, 2/21	4/19	1/12	---	3/15	1/12, 3/8	---
RSLogix5000 L 3: Project Development	CCP143	4	$1,875	---	1/31	3/6	---	4/24	4/3	---
RSLogix5000 L 1: ControLogix System Fundamentals	CCP146	2	$1,125	1/10, 4/3	1/17, 4/17	1/10, 2/28	2/14	3/13	1/10, 4/24	---
RSLogix5000 L 2: Basic Ladder Logic Programming	CCP151	2	$1,125	4/5	1/19	3/1	2/16	---	4/26	---
RSLogix5000 L 4: Function Block Programming	CCP152	2	$1,125	---	---	---	---	---	---	---
RSLogix5000 L 3: ControlLogix Maint. & TS	CCP153	4	$1,875	2/28	1/24 (S)	1/17	---	---	3/27	---
RSLogix5000 L 1: ControlLogix Fund. & TS	CCP299	4.5	$2,250	1/30	---	4/16	---	3/26	2/13	1/23
PLC5/ RSLOGIX 5 & SLC500/ RSLOGIX 500										
PLC-5/SLC 500 & RSLogix Fundamentals	CCN122	2	$1,125	---	1/24	---	---	---	---	---
PLC-5 / SLC500 & RSLogix Fundamentals	CCP122	2	$1,125	---	1/24	---	---	---	4/17	---
PLC-5 Advanced Maintenance & TS	CCP409	4	$1,875	---	---	---	---	---	---	---
PLC-5 & RSLogix 5 Programming	CCP410	4	$1,875	---	3/6	---	---	---	---	---
PLC-5 & RSLogix 5 Maintenance & TS	CCP412	4	$1,875	---	---	2/21	---	---	---	---
SLC 500 & RSLogix 500 Programming	CCPS41	4	$1,875	---	1/31 (K), 2/7	3/13	---	---	1/31	---
SLC 500 & RSLogix 500 Advanced Programming	CCPS42	4	$1,875	---	4/10	3/27	---	---	---	---
SLC 500 & RSLogix 500 Maintenance & TS	CCPS43	4	$1,875	2/14	1/3 (K), 2/28	2/14	1/17	---	2/21	---
SAFETY										
GuardLogix Application Development	SAF-LOG101	2	$1,125	1/17, 2/9	---	---		---	---	---
GuardLogix Maintenance & TS	SAF-LOG102	2	$1,125	1/19, 2/7	---	---		---	---	---
Safety Seminar - Machine Safety	SAF-SEM	1	$375	---	---	---	---	---	---	---
NFPA 70E - Elect.Safety & ARC Flash	SAF-SFT112	2	$1,125	---	---	4/10	---	---	1/17	---
2011 (NEC) Change Awareness	SAF-SFT12011	3	$1,500	---	3/20	---	---	2/21	---	---
NETWORKS										
DeviceNet & RSNetworx Configuration & TS	CCP164	3	$1,500	---	2/21	---	---	2/28	---	---
ControlNet & RSNetWorx Maintenance & TS	CCP172	2	$1,500	---	2/7 (M)	---	---	---	---	---
Ethernet/IP Design & TS	CCP178	2	$1,500	---	---	---	---	---	2/7	---
VISUALIZATION										
RSView32 Project Maintenance	CCP200	4	$1,875	---	---	---	1/24	---	---	---
RSView32 Project Development	CCV201	4.5	$2,250	---	---	---	---	---	---	---
FactoryTalk View ME & PanelView Plus Programming	CCV204	4	$1,875	---	2/14 (M)	1/24	---	---	---	---
FactoryTalk View SE Maintenance & TS	CCV206-LD	2	$1,125	---	---	---	---	---	---	---
FactoryTalk View Site Edition Programming	CCV207	4.5	$2,250	1/23	---	---	---	3/19	1/23	2/27
FactoryTalk ViewME & PanelView Plus M & TS	CCV209	2	$1,125	---	---	---	---	4/17	---	3/13
MOTION CONTROL										
RSLogix5000 L 4: Motion Prog. Using Ladder Logic	CCN142	3	$1,500	3/5	---	---	---	2/7	3/13	---
RSLogix 5000 Advanced Motion Programming	CCN190-LD	2	$1,125	3/8	---	---	---	---	---	---
Kinetix 6000 Maintenance & TS	CCN200	2	$1,125	---	---	---	---	---	---	---
AC & DC DRIVES										
AC/DC Motors & Drives Fundamentals	CCA101	2	$1,125	---	4/3	---	---	3/6	4/19	---
PowerFlex 700 Vector Control Config. & Startup	CCA161	1	$750	3/13	---	---	---	3/8	3/20	---
PowerFlex 700 Vector Control Comm.DeviceNet	CCA162	1	$750	---	---	---	---	---	---	---
PowerFlex 700 Maintenance & Troubleshooting	CCA163	1	$750	3/14	---	---	---	3/9	3/21	---
PROCESS CONTROL										
FactoryTalk Batch Server & Config Tools	RS-BATRG	3	$2,625	---	---	---	---	---	---	1/9
PlantPAX Process Automation Integration	PRS013	4.5	$2,250	---	---	---	---	---	---	1/16
CONDITIONING MONITORING										
Vibration Analysis Fundamentals	EK-ICM101	3	$1,460	---	---	---	---	---	---	---
Vibration Analysis: L I	EK-ICM201	3.5	$1,460	---	---	---	---	---	---	---
SOFTWARE										
FactoryTalk VantagePoint Config & Report	FTVP	4	$1,875	---	---	---	---	1/10	---	---
FactoryTalk AssetCentre Configuration	RS-FTACC	2	$1,125	---	---	---	---	---	---	3/27
FactoryTalk Transaction Manager	RS-FTTM	3	$1,500	---	---	---	---	---	---	2/15
Microsoft SQL Server for FactoryTalk	RS-MSSQLB	2	$1,125	---	---	---	---	---	---	2/13
INDUSTRIAL MAINTENANCE										
Industrial Electrical Controls Fundamentals	MFG213	4	$1,875	---	---	---	---	---	---	---

To enroll in any of these classes, contact your local Kendall Electric, or register online at www.kendallelectric.com. The class location key for Wayland includes Kendall Locations: F=Fort Wayne, K=Kalamazoo. M=Muskegon, S=Saginaw . You can find class curriculum maps on our website under training for your Kendall location under the Rockwell Regional Training Schedule.

Kendall Electric Inc.
5101 S. Sprinkle Rd.
Portage, MI 49002

KENDALL ELECTRIC INCORPORATED LOCATIONS

Alpena, MI 49707
119 W. Fletcher
989-356-3411
1-800-968-3411

Angola, IN 46703
2795 Woodhull Drive
260-665-2098
1-800-525-2842

Auburn, IN 46706
1200 S. Grandstaff Ave.
260-927-1530
1-800-368-1017

Battle Creek, MI 49037
131 Grand Trunk Ave
269-965-6897
Fax : 269-965-6899

Benton Harbor, MI 49022
1405 South M-139
269-925-3244
1-800-255-5214

Birmingham, AL 35222
3317 5th Ave. S.
205-254-3192
1-800-605-3192

Cadillac, MI 49601
909 W. 13th Street
231-775-9734
1-800-442-1711

Chattanooga, TN 37408
2310 Rossville Blvd.
423-698-4471
1-888-263-6673

Cleveland,TN 37312
2724 Keith St. NW
423-479-2639
1-800-472-4547

Coldwater, MI 49036
646 E. Chicago Rd.
517-278-4518
1-800-695-5464

Dalton, GA 30720
1020 S. Hamilton St.
706-275-4400
1-800-342-7629

Fort Wayne, IN 46825
415 Ley Road
260-484-0755
1-800-552-0999

Grand Haven, MI 49417
1436 Fulton Ave.
616-844-7017

Grand Rapids, MI 49504
832 Scribner Ave., N.W.
616-459-8327
1-800-442-2523

Grand Rapids-S. MI 49512
4525 44th St. SE
616-459-8327
1-800-968-9880

Holland, MI 49424
11560 E. Lakewood Blvd.
616-396-4625
1-800-968-4625

Jackson, TN 37801
25 American Dr.
731-423-0134
1-800-467-1155

Jenison, MI 49428
6726 Roger Dr.
616-662-0185
1-800-968-9880

Kalamazoo, MI 49001
5101 S. Sprinkle Rd.
269-345-0101
1-800-227-3674

Kendallville, IN 46755
109 S. Allen Chapel Rd.
260-347-3190
1-800-525-2841

Kingsport, TN 37660
122 Wexler St.
423-246-8151
1-800-775-3530

Knoxville, TN 37922
170 Mabry Hood Rd.
865-546-8755
1-800-532-8742

La Porte, IN 46350
915 Boyd Blvd.
219-362-2019
1-800-728-4331
219- 872-0628 Mich. City

Lansing, MI 48917
7633 Lanac St.
517-322-2411
1-800-292-0802

Midland, MI 48642
3201 Bay City Road
989-496-3600
1-800-968-3600

Mishawaka, IN 46544
4905 Lincolnway E.
574-259-0026
1-800-682-4528

Montgomery, AL 36116
6064 Perimeter Pkwy.
334-356-1845
1-866-711-8021

Muskegon, MI 49442
1699 Wierengo Dr.
231-773-6621
1-800-968-6621

Newport, TN 37821
133 Highway 25E
423-623-5650
1-888-264-0411

Oak Ridge, TN 37830
745 Emory Valley Rd.
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1-800-832-8742

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1915 Fochtman Ind. Park Dr.
231-347-2646

Pigeon Forge, TN 37863
117 Golf Rd.
865-453-4638
1-800-532-8742

Saginaw, MI 48604
5420 Davis Rd.
989-752-4181
1-800-968-4181

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700 N. Centerville Rd.
269-651-9495
1-800-916-1958

Three Rivers, MI 49093
1201 W. Broadway
269-273-8644
1-800-632-2011

Traverse City, MI 49686
840 Hastings St.
231-946-7262
1-800-968-7262

Tuscaloosa, AL 35405
1323 Whigham Pl.
205-759-5716
800-263-8393

Warsaw, IN 46580
1095 Fisher Ave.
574-267-8168
1-800-421-5214

Wyoming, MI 49509
1100 58th St. SW
616-406-1555

Call the Kendall Electric location nearest you for all of your electrical needs.