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WITTENSTEIN cymex® 5 Design and Sizing Software

By: Kevin Silver - Automation Engineer - Dalton, GA

WITTENSTEIN cymex (CYber Motion EXplorer) version 1 was first released in 1999. Now in 2017, we have version 5.

With version 5, WITTENSTEIN engineers have redesigned the cymex sizing software from the ground up. The result is a sizing tool that lets you design the entire drive train (application + transformation + gearhead + motor) sized and designed quicker, more easily and more reliably than ever before. Its calculations are considerably simplified by predefined standard applications. Optimally sized and more efficient motors are achieved by abstracting all important influencing factors. This helps ensure the smallest, lowest cost design to meet your application needs.

A new, customizable user interface and more intuitive navigation—including detailed descriptions of all input parameters—makes the software extremely user friendly.

Cymex 5 has an expansive database with more than 14,000 motors from 50 manufacturers stored in the database, along with more than 8,000 WITTENSTEIN alpha gearheads and 200 combinations of WITTENSTEIN linear systems.

You can build an application from a motion profile (similar to Rockwell Automation Motion Analyzer) or reverse design by importing a motor trace into the system. The applications range from building crank arms, turn tables, rack and pinion (including master/slave setups or gantry builds), belt and pulley systems, and much more.

For highly dynamic systems, Cymex 5 is my preferred software, used along with Rockwell Automation Motion Analyzer. Between the two software packages, I can design and size a complete application from the servo drive to the load.

For a FREE download, visit: http://alpha.wittenstein.de/en-en/cymex-5/

Contact your local Kendall Electric Automation Engineer for additional information.
E-Commerce at Kendall Electric, whether it is EDI, XML, PunchOuts, or internet ordering via the shop.kendallelectric.com website, is always evolving and we are constantly working towards creating the best customer experience possible.

In 2016, we upgraded the search engine on the shop.kendallelectric.com website. Among other things, this update has enabled us to roll out new products to the websites more rapidly, and for us to show the “Stock” products above “Non-stock” items on the product pages. The result is more accurate, relevant results when you use the search box. We have also made some look and feel updates to the website with ease of use in mind.

As we move forward in 2017 and beyond, additional changes will make the shop.kendallelectric.com website easier to use and will provide more information than ever before. If you already have an account with us, but don’t have a shop login, obtaining access is as simple as going to the “Register” link on the shop.kendallelectric.com website and filling in the appropriate information. This dynamic website can be accessed via your computer, phone, tablet or other mobile device 24 hours a day, 7 days a week, 365 days a year.

When registering for access to the site, you can also check the “Sign Up for OE Touch” box, to receive an invitation to our iOS/Android app. OE Touch is a tool for your phone or tablet that allows you to search inventory and create orders on the go. Just like the website, this tool gives you the ability to find price and availability for items while you are still at the jobsite or on that service call. Search for products by keyword, or use the camera on your phone as a barcode scanner to find items by UPC.

This app is available for both Apple and Android devices, and can be downloaded from the appropriate app store. Search for “Kendall Electric OE Touch”.

There are other areas of E-Commerce that customers can use to communicate with Kendall as well. We support EDI and XML transactions. If you’d like to send us cXML purchase orders, we can set you up with a URL to send those orders. Sending orders via EDI or XML is a quick and efficient way to get that order into our system and get the products you need to your office or job site. We also can send EDI 810 & XML invoices, EDI 855 & XML purchase order acknowledgements, and other documents to you and your business systems.

Streamline your ordering process with PunchOuts. If your company has a procurement system that can handle PunchOuts, we can set your company up for those too. A PunchOut connection will enable you to click the Kendall Electric PunchOut link from your system, shop our online catalog, and create a shopping cart for your project. When you click “Checkout”, that data gets sent back into your procurement system, and once approved, an order is sent to Kendall to fill.

We are always looking for ways to help our customers, so please let us know what you think! Send your feedback and comments to ecommerce@kendallgroup.com, and someone from our E-Commerce team will get back with you to discuss your comments or E-Commerce requirements.

We are here to help!
Safety is a word that we hear every day in our industry. Whether it be an established plant that has been running for years, or a new piece of automated equipment going into a facility, safety is at the forefront of people’s minds. It has to be. It should be. With that said, shock prevention falls under the umbrella of safety.

NK Technologies is a leader in shock prevention products. One of those products is their AGLD series Ground Fault Sensors. This product was brilliantly designed with protection of the equipment and the operator in mind. The product detects fault currents before damage can occur. The ground fault relay surrounds the wires and the output relay will change states between 5 and 100mA or 80 to 950mA; a range that needs to be determined before ordering the product. It comes with an LED display that shows the precise trip point and can be seen in any light condition. The display flashes when there is a current sensed over the trip point.

**Features**

- Electromechanical relay output provides both normally open and normally closed contacts and is compatible with most automation and control systems.
- Externally powered with a choice of failsafe or standard operation.
- A single turn potentiometer with the setpoint shown on the display makes adjusting the setpoint in the field easy.
- Large solid-core case with a large sensing window provides ample space for multiple conductors.
- Simple DIN rail mount for quick installation.

**Applications**

- Monitor Large Machines: Detect fault currents before damage can occur. Connect the output to a shunt trip breaker operating solenoid or to the circuit powering a connector coil.
- Water Delivery and Treatment: Detect moisture ingress in submersible pumps.
- Heating Processes: If an element shorts to ground, the sensor will activate to de-energize the circuit, keeping safety at the forefront.

If this product makes sense for your situation do not hesitate to get a hold of your Kendall Electric Account Manager to discuss more about NK Technologies and which products will work best for your application.
As a leading global manufacturer, and with a history dating back to 1888, Harvey Hubbell began a series of acquisitions of prominent lighting businesses in 1963. In 2002, Hubbell acquired Lighting Corporation of America, which transformed Hubbell Lighting into one of the largest lighting manufacturers in North America.

I was involved in helping with the design and build on a project using one of the Hubbell Outdoor Lighting family of fixtures; the AIO LED SERIES AREA/SITE/ROAD LIGHTER. The following example will show existing fixtures, light distribution and how to eliminate fixtures, calculation/photometry, cost savings, and ROI.

I received a call from a customer in Watervliet, Michigan. They were asking for some help re-lighting their site and roadway area, and wanted to look at an LED option. First, I visited the site and we counted the existing lighting, which consisted of several 400 watt metal halide fixtures. The site also consisted of three different lighting applications: the parking lot, perimeter, and roadway. We determined that our plan was to use just one style of fixture for this application, but different types of distribution in the different areas. This would result in giving each area better and more accurate lighting. Moving forward with the calculations using Google Earth and a CAD program, we were able to place each fixture at each existing pole location and come up with the distribution for each. You can see this in the photometry lay out below. As we placed the proper distribution type at each location, we were able to eliminate several fixtures, resulting in not only better lighting but a large cost savings as well.

KWH Savings Calculation:

- Total number of existing fixtures (32) x 455 watt metal halide = 14,560 watts
- For a twelve hour day (14,560 x 12) = 174,720 watts
- Seven days a week (174,720 x 7) = 1,223,040 watts
- 52 weeks a year (1,223,040 x 52) = 63,598,080 watts /1000 = 63,589.08 KWH x .085 per KWH = $5,405.84 existing utility cost for 1 year.

- Total number of replacement Hubbell LED fixtures (24) x 225 watt LED = 5,400 watts
- Twelve hour day (5,400 x 12) = 64,800 Watts
- Seven days a week (64,800 x 7) = 453,600 watts
- 52 weeks a year (453,600 x 52)= 23,587,200 watts /1000 = 23,587.20 KWH X .085 per KWH = $2004.91 replacement utility cost for 1 year.

Total utility savings per year = $3,400.93
Total project rebate from Michigan utility = $2,866.00
Total maintenance savings per year = $2,500.00

Savings Summary:

Total cost of replacement product = $18,089.76
Less total rebate of $2,866 = $15,223.76
Less total utility savings of $3400.93 = $11,822.83
Less total maintenance savings per year of $2,500.00 = $9,322.83

With the maintenance and utility yearly savings of $5,900.93 and a total product cost of $18,089.76, the payback comes to 3.07 years with a return on investment (ROI) of 32.62%. The rebate isn’t included in this calculation as it is a one-time payback. Note that the utility and maintenance savings go on even after the (ROI) and the five year warranty. Contact your local utility to find out if there are rebate opportunities in your area.

For additional information on this and other Hubbell Lighting products, contact your Kendall Electric Account Manager today.
HMS Anybus Ethernet IP Linking Devices

By: Tim Dunaj - Automation Engineer - Benton Harbor, MI

HMS Provides Connectivity Solutions to Enable the Manufacturing and Production World

As a Rockwell Automation Encompass Product Partner, HMS provides several connectivity solutions which complement Rockwell Automation installations. These solutions increase intelligence for better decision-making, thereby helping customers in their journeys to become connected. HMS includes the eWON, IXXAT, and Anybus families of product. In the interest of time and space, we will highlight some of the Anybus products.

In a perfect world, network technology across supervisory control and machine control is uniform. Devices from multiple vendors are universally compatible with the overall plant architecture and seamlessly transmit data back and forth with network masters. Let us all agree that we do not live in a perfect world.

In the real world, both controllers and devices support a great number of disparate protocols. As network standards—such as Ethernet/IP—evolve, Programmable Automation Controllers and HMI products tend to have these newer standards implemented quickly. Meanwhile, critical devices on the machine that are responsible for measuring, tracking, sensing, motion, and control are often several months behind. In many cases, products may be several years behind in adopting new connectivity technologies. This can create roadblocks to complete machine integration.

Stand-alone EtherNet/IP™ Linking Devices with Seamless Studio 5000® Integration

HMS Industrial Networks has introduced a new generation of Linking Devices for EtherNet/IP. These Linking Devices allow users to connect devices or systems on PROFINET, Modbus-TCP, or serial to a ControlLogix or CompactLogix environment. The Linking Devices include proven Anybus network communication technology.

The EtherNet/IP Linking Device for Serial contains the core functionality of the standard Anybus Communicator product, with the added benefit of tight integration into Rockwell Automation controllers. The Linking Device is configured entirely through a custom Add-On Profile (AOP) within the Rockwell Automation programming environment. Customers can use RSLogix 5000 (version 20) or Studio 5000 Logix Designer (version 21 and higher) with the Add-On Profile to automatically generate the process tags for use in their control program.

The EtherNet/IP to Profibus DP Linking Device and the EtherNet/IP to Modbus-TCP Linking Device are also configured through an AOP. The Profibus version can support up to 3500 bytes of input and 3500 bytes of output data with up to seven exclusive owners. While Modbus TCP version can support up to 4000 bytes of input and 4000 bytes of output data with up to eight exclusive owners.

Aside from the ease of configuration and integration, the EtherNet/IP Linking Devices provide some physical benefits. They are stand-alone devices, which do not require use of an I/O slot in the ControlLogix chassis. This ensures they will not affect the backplane performance. More importantly, this means the EtherNet/IP Linking Devices can be used with CompactLogix controllers.

If you find yourself implementing a new application or adding to an existing application, the HMS Anybus EtherNet/IP Linking Device may be the product you need. Seamlessly connecting information across disparate networks and bringing data through the Connected Enterprise can now be done with ease. If you have questions on this product, please contact your Kendall Electric Account Manager or Automation Engineer.

Read more: www.encompass.hms-networks.com
Higher Learning Night at Van Andel Arena was a huge success! Ephesus Lighting was on full display as the new leader in sports arena lighting in West Michigan. Crites Tidey & Associates and Kendall Electric were pleased to host our customers from several local colleges and universities. We were also joined by Mark Metaxas from Ephesus Lighting by Eaton and Brian Buckingham from SMG (Property Manager, Van Andel Arena) to discuss the current installation and system features of the recent lighting upgrade at the arena. The Grand Rapids Griffins mascot, Griff, was kind enough to join our area for a photo opportunity. Our evening ended with the Grand Rapids Griffins beating the Manitoba Moose with a score of 4-1. Way to go, Griffins!

Get the Ephesus solution that will give teams, players and legions of their fans an all-around exceptional event experience.

The Stadium 1000 and 750 LED luminaires allow you to bring the dynamics of the game to life with consistent, precisely-delivered light that meets the stringent demands of international HDTV broadcasting, digital photography and slow-motion recording. Controlled intensity and uniformity removes the need for supplemental sports lighting while eliminating shadows, improving the appearance of moving objects and the ease with which camera operators can follow the action of the game for broadcast.

The Arena Downlight 550 and 750 provide professional caliber sports lighting with features designed with indoor hockey and basketball arenas, field houses and similar indoor sports venues in mind. Offering versatility and flexibility, the Arena Downlight 550 and 750 deliver controllable, maintenance-free, quality lighting with a great return on investment.

The Arena Series delivers consistent, precise, dimmable light to eliminate unintended shadows and maintain uniformity while exceeding the stringent demands of HDTV broadcasting, digital photography and slow-motion recording. Take control of your venue and transform the entire fan and player experience with a solution that embraces the action of the game.

The All Field Series is the ideal solution for professional caliber outdoor sports lighting with features designed with municipal, high school, collegiate and semi-professional outdoor sports venues in mind. Offering versatility for any outdoor sport including football, soccer, baseball, lacrosse and field hockey, the All Field light delivers maintenance-free, professional sports lighting with a great return on investment.

For additional information on any of these products, contact your Kendall Electric Account Manager or visit ephesuslighting.com.
Data-Linc Group released its new, much anticipated high-speed modem on March 1st. Greater connectivity and information sharing create the need for a significantly larger quantity of data to be transferred reliably without undue delays. With Connected Enterprise, Industrial Internet of Things (IIoT) and Big Data in mind, a new product must meet these criteria:

- Provide robust reliable data transfer in industrial environments
- Support band intensive applications (802.11n)
- Operate license-free (900 MHz, 2.4 GHz, 5 GHz)
- Be industrial grade (in-plant and outside industrial environments - temperature, humidity; 18 gauge steel enclosure, weatherproof)
- Employ modern security encryption (WPK2, AES 256)
- Provide short range and long range wireless communication (900 MHz - awaiting IEEE Standards approval; 5 GHz - no viable long-range option, 2.4 GHz “best in show”)
- Offer flexible topology (configurable as AP, Wireless Client, AP/R, and Bridge)
- Priced to attract broad market base

By combining 2X2 MIMO with OFDM (Orthogonal Frequency Division Multiplexing) technologies and 500mW of power, the HSM800E meets all of these needs. Combining 2X2 MIMO technology and high power makes it unique in the industry and offers not only a range greater than other 802.11b/g/n products, but also enhances plant floor performance by reducing LOS issues and multi-path fading caused by RF reflection that can be particularly troublesome for plant-floor data transfer—conditions that constrain data rates and reliability in typical high-speed data systems.

The HSM comes standard in an IP65 weatherproof enclosure to withstand outdoor conditions, as well as a lower priced indoor-only version in a steel enclosure. It also offers passive Power Over Ethernet (PoE) allowing mounting flexibility—DIN rail and pole mount capability, as well as flexible network design with each unit, configurable for any of four modes: Access Point (AP), Wireless Client (WC), WDS Bridge and AP Repeater (AP/R).

Continued on next page...

This wind farm diagram is an example of how to use the HSM800E to enhance range and area coverage using the HSMs in Access Point/Repeater mode (AP/R) to facilitate communication over a large area served by HSM800Es configured as Wireless Clients (WC). The AP/R configured HSM800E hardwired to its PLC’s LAN connection communicates through the second and third HSM800E in AP/R mode thus extending the communication range between control central and the outlying wind turbines.
New this month to Kendall Electric are long range rugged laser distance sensors from DIMETIX USA. This unique line of laser sensors can be used to measure and sense a variety of process parameters, all based on an absolute distance output:

- **Position**
- **Width/Length**
- **Diameter**

Dimetix FLS laser sensors are compatible with Rockwell Automation products via the built in SSI encoder output and through the Ethernet IP gateway.

The Dimetix EDS series laser sensors are more compact and offer an entry level product with analog output that can be used for process control applications.

Key Laser Family Features:

- 0.05-500 m range max
- Up to 0.1 mm resolution
- Up to 1.0 mm accuracy
- Digital/analog/serial; SSI communications on certain models; Ethernet IP via gateway
- Class II eye-safe laser
- P 65 protection class and rugged housing

DIMETIX lasers perform just as well in tough environments, like steel mills, as they do when used in high speed warehouse Automatic Storage and Retrieval Systems (ASRS).

Dimetix USA provides laser distance sensors and accessories, laser-sensor based turn-key solutions, and technological expertise for a wide range of industrial measurement and control applications. They are experienced with Rockwell Automation and other industrial control systems.

For additional information on our new Dimetix products, visit: www.dimetix-usa.com or contact your local Kendall Electric Automation Engineer.
Arc Flash Protection
By: Jim Waslawski - Account Manager - Traverse City, MI

A large customer of ours, EJ USA, in the Traverse City, Michigan area, had an arc flash study done to determine what arc flash hazards they had. Some recommendations were made to reduce the arc flash risk levels throughout their plant, including updates to one of their lines. This service was accomplished through the arc flash program provided by Rockwell Automation.

With this program, we started with a walk through—identifying areas for consideration of arc flash levels—then moved into a full plant sweep. The results of the walk-through determined that a one-line diagram update was needed, along with recommendations to reduce arc flash in high level rated areas. This was done by analyzing trip curve coordination and changing to faster acting devices such as circuit breakers and fuses. In some areas identified as dangerous, maintenance bypass breakers were used to remove the arc flash or reduce it to a level one. EJ USA also purchased a three-year contract that provides updates to their one-line diagram, reflecting any upgrades, additions or deletions, and any required relabeling. Training was accomplished by the contracting firm. For more information about Safety Services Arc Flash Analysis from Rockwell Automation, go to: http://www.kendallelectric.com/dl/8876

For areas where Arc Flash protection is needed, the maintenance department was looking to upgrade some of their gear. The Balaclavas they used met the cal rating requirements but would fog up when worn and cause very poor visibility. Kendall Electric was able to provide a solution with the manufacturer Cementex. The product chosen was a fan forced Balaclava part number HRC4-AFH-HVS. This vented product (modeled above by Eric Soper in the Kendall Electric Traverse City office) allows the wearer to work in a fog free protected fashion. Cementex offers many other protection devices from tools to clothing, gloves and face shields, storage, protection, testing and recertification, and more. Visit Cementex at: http://www.cementexusa.com/index.php

Other items used to prevent arc flash were the Grace combo voltage indicator test point kits, programming ports, and the necessary labeling items from Grace Engineering. These devices allowed the personnel to verify the presence of voltage both visually and with a known working test meter. The visual indication is also used for mechanical troubleshooting to verify voltage has been removed before the Lock Out Tag Out (LOTO) procedure can be done. Once the mechanical repair is made, the LOTO can be removed and the system can be reset. For datasheets and additional information on this voltage test station, visit: http://www.kendallelectric.com/dl/VTS

Grace Engineering also offers many configurations of computer and PLC Interface, Manufacturer-Specific Components and other common connections with the Grace Port offerings. These allow the door to stay shut while allowing access to the network and or other controls and controllers. Check out the Graceport components available at: http://www.kendallelectric.com/dl/GC

For a wide variety of arc flash protection items, please contact your Kendall Electric Account Manager or a local Kendall Electric location near you.
More than ever, today’s electrical systems are one of the most important parts of any office building, industrial plant, hospital, sports area, or other facility. A major blackout is a major issue.

Did any of you watch Super Bowl XLVII Ravens vs. 49ers? This game was played at the Superdome in New Orleans. The 30 minute blackout that occurred could quite possibly have been avoided, had the system designer properly coordinated the new switch gear that was installed eighteen months beforehand.

To avoid your Super Blackout or major downtime look no further than Bussmann. From Quik-SpecTM Coordination Panels to Selective Coordination Designer v1.0 (free powerful online tool) to help you identify and select coordination solutions. Also their full line Low-Peak fuses. Eaton Bussmann will keep your facility up and running.

Selective Coordination Designer v1.0

Now, at your fingertips, SCDv1.0 uses cutting-edge functionality for:

- Displaying a one-line circuit diagrams
- Compiling a list of all viable solutions for selected devices
- Pinpointing the solutions for the selected devices and assemblies
- Estimating conductor sizes, if unknown
- Calculating fault currents, if unknown
- Exporting the results to pdfs

With this tool, you can select from today’s broad variety of overcurrent solutions that better address important safety, equipment protection, reliability and efficiency considerations.

For additional information, visit: KendallElectric.com/dl/SC

For more information on Eaton Bussmann Selective Coordination, please contact your local Kendall Electric Account Manager.

Quik-SpecTM Coordination Panels

- Ease of selective coordination using published circuit breaker/fuse and fuse/fuse ratio tables
- Compact footprint up to 40% smaller than other fusible solutions
- Safety-focused design that includes finger-safe branches, branch fuse interlock and fuse ampacity rejection

For additional information, visit: KendalElectric.com/dl/QS
I have spent the majority of my working life, a little over 40 years now, working in or around various types of hazardous environments. Some were corrosive, some toxic, some explosive, and some were all three. (When you have a minute look up “Tungston Hexaflouride” - it’s a dandy.) I’ve worked in a steel mill, a coal fired power plant, a semiconductor manufacturing facility, as well as refineries. Even today, oil and gas production, treatment, and storage facilities make up a large part of my customer base. Most industrial facilities have at least one area that is labeled as a “Hazardous Environment”. This of course means that in some way there is potential for harm to people and equipment. For this reason, these companies spend a large amount of time and money training their employees how to safely work in those hazardous environments.

It is surprising how often I encounter men and women working in hazardous environments that don’t understand their potentially dangerous surroundings. Not taking your hazardous environment seriously can easily lead to doing something based on assumption or opinion that in truth could potentially put yourself and others in danger. For instance, installing a fixture or other electrical device has a rating of “Class 1 Div 1” in a Class II Division 1 or Division 2 environment is a common mistake. This mistake is often made by people who understand that the Class1 Div1 is explosive vapors, gases or liquids and that Class II is for explosive dusts. The assumption is that an explosive vapor or liquid is much more difficult to deal with than flammable dust, so it should be okay. The fact is that it is almost always not okay, and for multiple reasons. There is a lot to these reasons and explanations and at times it can be complex and very confusing…but there’s help out there.

Hazardous environment, flammable and inflammable, classifications, divisions and groups—numbers, letters, and mnemonics abound. Like LEL, Vapor Pressure Point, Zones and Boundaries IEC, ATEX, CENELC, NEC, CEC, UI, FM, NEC...

All of this stuff is very important in the world of hazardous environments and the regulations associated with them. It is no easy task to determine how to safely select, install, operate and maintain electrical equipment in these environments. But there are some great resources out there that can make it a lot easier to successfully navigate through all of that information and make safe, cost effective decisions.

Appleton Electric has a wide variety of products designed for these environments, from hazardous location-rated LED lighting to cable glands designed to allow safe cable entry into and out of various types of hazardous environments. But, as I said before, choosing the right products and properly installing those same products can be difficult to do. One of the resources that I find very helpful for most hazardous applications is a free guide that Appleton put together called “Electrical Energy Explained”. This handy 62 page booklet can not only help you understand the hazard that your working with, it can also help you select and apply the correct products for that same environment.

Stop by our counter today! Promotion ends May 31st!

Counter Promo
April 3 - May 31, 2017
While Supplies Last.

Earn a new safety T-shirt this spring!
For every $100 of any Appleton Product Purchased at any Kendall Electric sales counter on a single order

Stop by our counter today! Promotion ends May 31st!

Better understanding leads to better choice
Appleton developed the Guide to better inform all persons involved in explosionproof selection.

Excerpt from the Appleton guide “Electrical Energy Explained” Pub #ATXGBE08

Access this guide at:
KendallElectric.com/dl/EGSE

There are many other resources including free information and training on electrical codes, standards, as well as safe installation practice available to you. Talk to your Kendall Electric Account Manager and they can help you rally the resources to safely handle the hassles of hazardous environments.
Eaton Arrow Hart’s controlled receptacle meets the latest codes and standards pertaining to installation of controllable electrical wiring devices.

These receptacles have a permanent mark which differentiate them from existing standard receptacles available. The controlled receptacle marking printed on the face of the device is NEMA approved and compliant with the National Electric Code article 406.3 and ASHRAE 90.1 Energy Efficiency standard.

Several states have now adopted these standards which meet or exceed ASHRAE 90.1-2010, which requires automatic receptacle control of 50% of the 15 and 20 Amp receptacles. This includes spaces such as those found in modular partitions, private offices, open offices and computer classrooms. Plug-in strips and other similar devices can no longer be used for automatic receptacle control.

There are several strategies we may employ for providing automatic plug load or receptacle control. One such strategy is occupancy based control, which provides that occupancy or vacancy sensors continually monitor the space, which leads to the receptacles being turned off either directly or sending a signal to a building or lighting control system. Another strategy is to use schedule-based control which typically is performed with the use of a lighting control system or some other time clock based device. These devices allow for the receptacles to be scheduled according to a pre-set schedule controlled per the ASHRAE standards.

The selection of receptacles comprise several variations including dual and half-controlled duplex and decorator receptacles in both a 15 amp and 20 amp version at 125 volt. All of these include the NEMA approved ‘controlled’ symbol which provides for easy recognition of the controlled outlet. These devices are available in a wide assortment of colors which match other type receptacles and switches in the space. All of the other features in the Arrow Hart construction grade receptacles such as high-impact nylon face and automatic grounding system come with the controlled receptacles.

Contact your Kendall Electric Account Manager for additional information.

**Place your order today! Promotion ends April 30th!**

For ordering devices, include Cat. no. followed by the color suffix: B (Brown), BK (Black), GY (Gray), LA (Light Almond), RD (Red), V (Vory), W (White).
Kendall Electric has been a leading supplier of Machine Vision solutions for over 15 years. Our product portfolio and our expertise in this market has vastly grown in the last several years, and we continue to provide both quality products and support to our customers. This equates to value beyond any other product or reseller in the market.

Our value starts with over 14 engineering specialists in Michigan and Indiana that assist with applications, evaluations, feasibilities, and support on machine vision products. The assistance provided includes inspection, identification (ID), sensing, and other solutions. No other organization can provide this type of expertise and breadth of personal assistance—Only Kendall Electric. Our specialists have a vast array of equipment where they can demonstrate and prove applications right at your facility or on your factory floor. Included in our group of specialists is a specific vision engineer who can take the toughest applications and analyze them in our very own laboratory style set-up. This lab allows us to set up lighting, lensing, and various filtering to simulate the environment of your application. We can provide a short report on our findings and recommendations.

In addition to the expertise and value of our people, we sell and support the highest quality of products on the market, starting with the camera systems from Cognex Corporation. Supporting products such as lighting, lensing, filtering, and mounting, complete our portfolio and provides our customers with complete solutions for any application. Look to Kendall Electric and our partnering manufacturers for your next Machine Vision application.

Access our complete Machine Vision Solutions Linecard at: Kendallelectric.com/dl/mvs
FREE Money = FREE Training!
By: Phil Reece - Services Specialist - Grand Rapids, MI

Training Grants through the State of Michigan
Through Michigan Works! Agencies

Does your business reside within the State of Michigan? Would Technical Training be beneficial to your employees and business? If you answered “YES” to both of these questions you may be eligible to receive a training grant from the State of Michigan.

Training Grants = Free Money = Free Training!

The grants are issued by the Michigan Department of Talent and Economic Development through the Talent Investment Agency. These grants are provided to achieve two objectives. The first is to increase the productivity of your employees. The second is to enhance the competitiveness of Michigan based businesses.

The administrative aspect of these grants is managed through Michigan Works! Agencies. To apply for these grants please engage your local Michigan Works! Agency. You can find your local Michigan Works! Agency at: www.michiganworks.org

As part of the application process for these grants, you will be required to:

1) Identify the Technical Training needs of your employees.
2) Develop a Plan to address these identified Technical Training needs.

Kendall Electric and Rockwell Automation have a solution that can assist you with this portion of the grant application process.

Training Advisor from Rockwell Automation
A web based workforce analysis and planning tool

Training Advisor is available to all active TechConnect users at the “Product” level of support. This tool enables assessments on 25 different automation platforms by referencing 500 Rockwell Automation generated assessment tasks. These assessments can help you to define your specific Technical Training needs.

Training Advisor utilizes the results of these assessments to develop multiple Training Plans for your business. Training Plans are developed to address both Group and Individual training needs. These Training Plans are based on standard classroom courses provided by Rockwell Automation at numerous Kendall Electric locations.

Training grants can provide significant benefits and advantages for your business. Here are some basic grant statistics for the most recent fiscal year:

- Number of companies in MI receiving grants: 482
- Total amount of grants issued: $17,921,190

Please contact your local Michigan Works! Agency to discuss these training grant opportunities and contact your Kendall Electric Account Manager to discuss how Training Advisor can be used to assist you with this grant process.
Mersen offers a training resource that is fast, functional, informative, and versatile. If you are working with fused systems or bus bar applications that you are unfamiliar with, or if you simply want to bolster your knowledge, check out the PIQ Quiz section on Mersen’s web site at http://ep-us.mersen.com/resources/piq-quiz/. Chances are you will find the topic you’re seeking from the several you have to choose from.

Topics include:

- Knowledge of Arc Flash Hazards
- Assessing Your Risk of Arc Flash Hazards
- Code Changes - 2011 NEC
- Determining Bus Bar Cross-Sectional Area
- Laminated Bus Bars
- Power Electronics Bundling
- Selective Coordination
- Semiconductor Fuses
- Short Circuit Current
- Solar Power Protection
- Solar Power Protection - New Standards
- Surge Protection - New Standards
- Surge Protection / Overvoltage Protection
- Thermal Protection

Also extremely helpful are the three different approaches that you can choose for each of those topics. You can go directly into the Quiz module and immediately gauge your competency, or you can take a more preparatory option by accessing the Quiz Notes section. Here you will find each question for the associated quiz with the correct answer indicated in the multiple choices given. Both of those approaches are great for on-the-go knowledge growth and affirmation. The last option, “Learn More”, really offers some help with drilling down to the real meat and potatoes.

So the next time you are wanting to “beef up” on your fuse products repertoire (great ice-breaker at cocktail parties) remember that Mersen has some great tools at your fingertips!
Many of us already know what an arc flash is or have seen a video of an arc flash happening. The explosive energy released can have a deadly effect. The intense heat, shock wave, molten metal shooting out, blinding light, and toxic smoke can cause severe and sometimes fatal injuries to workers several feet away.

The financial costs of an arc flash incident can easily exceed one million dollars per occurrence in medical expenses, downtime, and significant fines. OSHA uses the requirements of NFPA70E to determine whether an employer acted responsibly in protecting their workers from arc flash hazards.

Mersen has an Amp Trap 2000 Class RK1 fuse which is a UL listed branch circuit fuse with the highest degree of current limitation. This class of fuse isolates a faulted circuit before the fault current reaches its maximum value. This allows the fuse to:

- Limit the total energy delivered to an arcing fault
- Limit thermal and mechanical stresses created by the fault current
- Reduce both the magnitude and the duration of the fault current
- Be easily coordinated in both the overload and short circuit regions

Because the RK1 class fuse reduces the amount of heat generated, the use of these fuses typically minimize the level of personal protective equipment (PPE) required allowing the employees to work more efficiently and safely. When applied properly, these fuses can reduce injuries at a working distance of eighteen inches instead of several feet.

With the same overall dimensions as class RK5, class K, and class H fuses, the class RK1 A6D-R make upgrading a simple change and can cut down on your inventory. I did a fuse audit for a customer of mine last year who had every brand of fuse and wanted to see about standardizing on one brand. We inventoried what he had and came back with a report showing how he could drastically cut down on the number of fuses he had and save a lot of money in return. Earlier that year, I had spoken with him about arc flash and discussed how the Class RK1 fuses could help him with arc flash and the safety of his employees and equipment. Therefore, when he chose to standardize his fuse bins, he insisted we also put the RK1 fuses in along with the other fuses we were replacing.

I highly recommend the next time you perform a fuse audit, you ask your Kendall Electric Account Manager about arc flash and the benefits to using a Class RK1 fuse.
You’ve heard “location, location, location” as it relates to buying or selling a home or when someone selects a site to open a business. Location is a critical factor in these types of decisions and the outcome can be affected positively or negatively depending on the circumstances. Nothing could be truer in an industrial environment.

Though the circumstances are quite different, industrial environments can present their own set of problems when planning equipment installation in a certain area. An advanced coal test facility just had to address such an issue. They had new equipment arriving and this equipment would change the hazardous classification for the particular area it was in. This situation can cause a multitude of concerns, and in circumstances like this, a thorough investigation of the area has to be performed. After reviewing the area, engineering and maintenance personnel noticed that one of the panel boards would have to be replaced.

We discussed the situation with our local Crouse Hinds Representative and we looked at the EPL and D2L series panelboards, to meet the necessary requirements. The customer turned to Crouse Hinds D2L panel boards for the solution. EPL and D2L series panelboards provide a centrally controlled switching system and short circuit protection for feeder or branch circuits to control lighting, heating, appliances, heat tracing, motor, and similar circuits. GFI and EPD options offer personnel and equipment protection respectively.

EPL Series panelboards are designed for use in:
• Class I, Div. 1 and 2, Groups B (With EPL GB KIT), C, D
• Class II, Groups E, F, G
• Class III hazardous areas as defined by the National Electrical Code (NEC) and Canadian Electrical Code (CEC), as well as in damp, wet locations - indoors or outdoors - with UL Type 3, 4, 4X (with S752 or S753), 12.

D2L Series panelboards are designed for use in:
• Class I, Div. 2, Groups B (with EPL GB KIT), C, D
• Class II, Div. 2, Groups F & G
• Class III

CAUTION
Panelboards should be installed, inspected, maintained, and operated by qualified personnel. Read entire instructions before starting installation of this product. Contact your Eaton Crouse-Hinds Sales Representative, Eaton Crouse-Hinds Customer Service, or your Eaton Crouse-Hinds Distributor if you have any questions.

As with an installation that can reclassify or cause a hazardous location there can be many other items such as disconnects, conduit fittings, enclosures, signaling and lighting to name a few that will also need to be addressed.

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We discussed these areas with the facility’s staff, and determined the lighting would need to be updated for certain areas as well. We offered the Crouse Hinds Champ LED fixture to meet the requirements for this area. Not only does it meet the classified area’s requirements, it also provides significant energy savings by using LED technology. The customer is currently reviewing the area for a count of the fixtures affected.

Remember “location, location, location” as it applies to industrial environments and make sure you’re covered with Crouse Hinds products. Please contact your Kendall Electric Account Manager for additional information about these products.

Be a Cut Above!

Let Kendall Electric & Eaton Crouse Hinds help you stay sharp this year!

Receive one Buck knife for every $500 worth of Eaton Crouse Hinds purchased from Kendall Electric beginning March 6th, while supplies last.

- Promotion ends April 30, 2017 or when the knives are gone
- Knives will be sent to Kendall locations for customer distribution at the conclusion of the promotion
- Maximum of five knives per customer account
- Accounts must be current to qualify
- Kendall Marketing will track all sales
- Orders are cumulative over the promotion period and must invoice by April 30, 2017
- Offer void where company gift policy prohibits premium acceptance
- Prize winners are responsible for all federal and state tax liability
- Knife style and color may vary from the image represented

Explosionproof/Industrial Products

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- LED luminaires - the broadest portfolio for industrial and hazardous applications
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- HID luminaires
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Plugs and Receptacles
- Pin and sleeve devices
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- NEMA configured devices
- Interlocked receptacles
- Single-pole and multi-pin devices

Place your order today! Promotion ends April 30th!