

PULSE

EDUCATION AND STATE & LOCAL GOVERNMENT

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WESCO®

FROM THE DIRECTOR'S DESK

Addressing challenges such as technology upgrades and energy savings projects are a priority for every municipality or campus. Protecting critical physical assets from threats, while also safeguarding your staff and visitors is a prominent element of most administrators' and officials' plans. As a value-added distributor of data and broadband communications, electrical, safety, security and MRO products, WESCO can help you keep your campus facilities operating at peak levels.



Here's how:

CRITICAL INFRASTRUCTURE PROTECTION PROGRAM

Our Critical Infrastructure Protection Program (CIPP) aids customers in securing their most critical assets. We have years of experience in finding the right technology to help customers secure data centers and apply it to physical asset protection. Our CIPP team provides design and application consulting while offering the latest in passive and active sensing technologies.

VALUE CREATION SOLUTIONS We provide everyday products for municipalities and campuses. In addition, a variety of services including energy performance analysis, lighting renovation, on site supply chain management services through WESCO Supply Run, and e-business solutions are available through our Value Creation program. Take advantage of these services to reach sustainability goals or maintain your facility.

COOPERATIVE PURCHASING ORGANIZATION CONTRACTS

WESCO is one of the few companies in the industry that has a dedicated State, Local and Education team to manage our statewide and cooperative contract relationships and provides you with a central point of contact. We currently hold a cooperative contract (#R142106) for National IPA to supply members with electrical, lighting, voice and data communications, MRO supplies and related services.

ECOMMERCE Our feature-rich eCommerce website, buy.wesco.com, provides WESCO customers with 24/7 ability to place purchase orders, check product availability, access customer-specific pricing, create requests for quote (RFQs), view detailed product descriptions, product images, and catalog pages.

Through our nationwide network of convenient locations, WESCO can help you maintain and provide energy savings for your facility! Contact your local branch or email sled@wesco.com today!

Rob Bezjak

Director/GM Institutional and Local Government Markets

CRITICAL INFRASTRUCTURE

BY AXIS COMMUNICATIONS

Your security site plan can have a lot of moving parts. For critical infrastructure sites (i.e., power plants — nuclear, gas, electrical or solar; petroleum refineries; data centers and the like), it is important to know what is happening both inside and outside, regardless of whether you are onsite or not. Not knowing what's going on is, to put it mildly, disconcerting. Yet, knowing that something has happened, but not being sure exactly what that might be, can be just as frustrating.

Consider the concern for worrisome activities occurring right under your nose while you're onsite focused in one particular area while an event is occurring at another. Network video surveillance offers versatile layered perimeter protection that allows you to find out what's going on around and within your critical infrastructure in real time, thereby enabling resourceful and cost-effective protection.

TRADITIONAL MEASURES FOR PERIMETER PROTECTION

To safeguard against trespassing, theft, and vandalism, governments, public/private utilities, and other owners of critical infrastructure invest in various perimeter protection measures. Traditionally, these measures relied on technologies such as short-distance radar, lasers, ground sensors, motion sensors or motion-sensitive fence wires. They all perform well, and can, under many circumstances, capably detect intrusions. In recent years, the development of advanced algorithms has helped in filtering false alarms from many of these devices, but you still need a consistent, reliable means to verify true and false alarms.

NETWORK VIDEO FOR A CLEAR PICTURE AND STRONG DECISION SUPPORT

With network video cameras it is possible to build an intelligent and reliable surveillance system dedicated to protecting the perimeter of all kinds of critical infrastructure — analytics at the edge. A vast range of products make such IP-based systems very versatile and high performing, especially in difficult lighting environments and in varying and demanding weather conditions.

Video analytics at the edge (or perimeter) minimizes video processing on the back end, which simplifies balancing the entire system from the edge to the data center. Edge analytics also enables easier and faster scaling to accommodate more points of video capture and analysis. With the functionality to add smart analytics directly to the camera, your system can serve and protect you and your assets with or without you onsite.

Clear and crisp images and high-performing smart analytics facilitate detection and identification of objects, people and incidents making it easier to separate true alarms from false alarms that don't require a response. This means a greater ROI versus older systems, since the individual normally tasked with traveling to the site to make this determination (in some cases, 50 miles or more) is no longer necessary. Again, these systems provide high quality images, enabling advanced features

such as video motion detection, virtual fence or cross line detection.

Moreover, a network camera can be configured to sustain an alarm trigger outside of the fence offering an earlier detection. As an example, you can pair the cameras with object filtration, which reduces the number of false alarms by only reacting to objects that fulfill certain, predetermined criteria, such as size, speed, etc.

DETECT – VERIFY – ACT: HOW IT WORKS

The main objective for critical infrastructure perimeter protection is to detect a threat or an intrusion at the earliest possible stage. However, areas where critical infrastructure exists can pose a significant challenge for security managers. The sheer size of these campuses can be a problem. Variable lighting conditions can also present a problem, especially during night time where shadows and blind spots can cause significant issues.

FIRST LINE OF DEFENSE – THERMAL NETWORK CAMERAS

Modern thermal network cameras are very sensitive and accurate. They are unrivaled when it comes to detection, making them ideal as a first line of defense. Challenging environmental conditions such as looking into sunlight or light fog or smoke is difficult for visible cameras. Thermal cameras don't use reflected light for imaging, therefore are not affected by the challenging environments.

Once a suspicious event has been detected, the thermal camera can be configured so that it automatically directs a PTZ (pan/tilt/zoom) camera to the place the incident occurred. Working in parallel, these two camera types form an unbeatable combination.



ON TOP WITH PTZ DOMES AND FIXED CAMERAS

After a detection, verification must follow before any decision on further actions can be taken. PTZ cameras are adaptable and enable an operator to pan and tilt the camera remotely to analyze the situation very quickly.

State-of-the-art network cameras deliver sharp images with high resolution, enabling facial identification or even license plate recognition at very long distances.

Special low-light technology that reduces noise and maintains colors even in very dark conditions is therefore a useful capability that greatly enhances the user's ability to effectively recognize and identify people, vehicles and incidents.

AUTOMATIC NOTIFICATION

When an alarm is triggered, a real-time notification is automatically sent by e-mail. Using a remote viewing app, the receiver can then see a live stream from the camera or a recording of the triggering event. Based on this visual information, it is easy to go ahead and decide on the appropriate action.

CONCLUSION

Network camera surveillance for critical infrastructure perimeter protection enables you not only to detect a possible intruder at the earliest stage possible, but it will also help you to verify the extent and severity of a breach. These security systems can be configured to provide essential information to adopt an appropriate response based on feedback from the system itself.

Furthermore, by checking video streams, it is easy to distinguish between false alarms and real intrusions requiring immediate action. The versatility of IP-based security solutions, including the right combination of network cameras, applications, radar, video analytics software, and other add-ons create a system that is flexible, scalable, and cost efficient.

ABOUT AXIS

Axis Communications offers intelligent security solutions that enable a smarter, safer world. As the global market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform — delivering high value to its customers and carried through a global partner network.



A SMARTER PERIMETER DEFENSE

Take your customers' perimeter security to the next level with the AXIS D2050-VE Network Radar Detector using advanced radar technology to detect trespassers who may have breached the premise's first line of defense. Enhance the perimeter solution with a wide variety of network security cameras including AXIS Q-line PTZ cameras with autotracking.

- Minimize false alarms with intelligent radar algorithms and day and night functionality
- Detect angle of movement, size, and speed of moving objects up to 160 ft with a 120-degree range of view
- Simplify integration with an open platform with AXIS Camera Station VMS and other systems

To learn more about Axis' D2050-VE Network Radar Detector, call your local WESCO sales representative today!



M18 FUEL

DRIVEN TO OUTPERFORM.

THE NEXT BREAKTHROUGH IS HERE

2727-21HD

Power to Cut Hard Woods
Faster Than Gas
Up to 150 Cuts
(6" x 6" Cedar)



2722-21HD

15A Corded Power
Faster Than 15A Corded
150 Cuts Per Charge
(2" x 12" Pine)



2736-21HD

15A Corded Power
24-1/2" Rip Capacity
Up to 600 LFT Per Charge
(3/4" OSB)



2785-21HD 2785-22HD

15A Corded Power
Up to 2lbs Lighter
9" Grinding Capacity



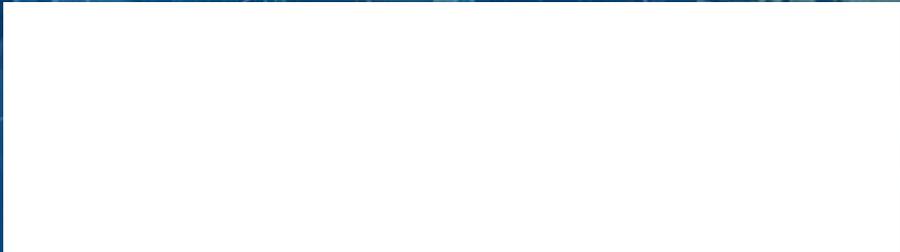
2732-21HD

15A Corded Power
Faster Than 15A Corded
750 Cuts Per Charge
(2" x 4" Pine)



A nighttime cityscape featuring the Petronas Towers in the center. The image is overlaid with a network of white lines and nodes, and several circular icons representing different technologies: a Wi-Fi symbol, a triangle with a dot, a smartphone, and a house. The overall color scheme is dark blue with white and light blue highlights.

IP & PoE: ENABLING THE



BUILDING

BY BELDEN

Digital buildings, smart buildings, intelligent buildings, connected buildings — no matter what you call them, the sentiment is the same: A building with devices and systems that are designed to collect and share data to run as efficiently as possible without human intervention.

BENEFITS OF IP-BASED SYSTEMS

To function, an IP-based system needs access to power and data. When deployed in digital buildings, they offer many benefits:

SIMPLE SCALABILITY

Do you only need 15 surveillance cameras today? Then that's all you need to install. If you decide you need more devices, the system can quickly and easily be expanded. If you decide that you need fewer devices, they're easy to uninstall. The system doesn't require you to install a certain number at a time.

REAL-TIME NOTIFICATIONS

Because they're connected to the network, IP-based systems can send you alerts or notifications via texts, calls, emails — whatever you prefer — about potential problems, changes, etc. Want to know if one of your digital signage screens goes down? An IP-based digital signage system can tell you. Want to know if someone has breached your physical access control system? An IP-based access control system can tell you that, too.

COMMUNICATION WITH OTHER SYSTEMS

IP-based systems are easier to connect and integrate to work and communicate with each other. An example: connecting fire alarm systems and digital signage. If the fire alarm system senses a potential event, the digital signage system — which can communicate with the fire alarm system — can display instructions and evacuation procedures.

TRUSTED RELIABILITY

In legacy systems, one single point of failure could cause entire portions of the system — or the entire system itself — to stop working. Because IP-based devices are independent of each other, and have their own IP addresses, a single point of failure only impacts that one device. If one surveillance camera goes down, the rest of the cameras remain operational.

REMOTE MANAGEMENT

With IP-based systems connected to the enterprise network, they can be monitored and managed via a standard web browser. Wherever you can connect to the Internet — at home, at work, on vacation or at the store — you can keep an eye on building system performance.

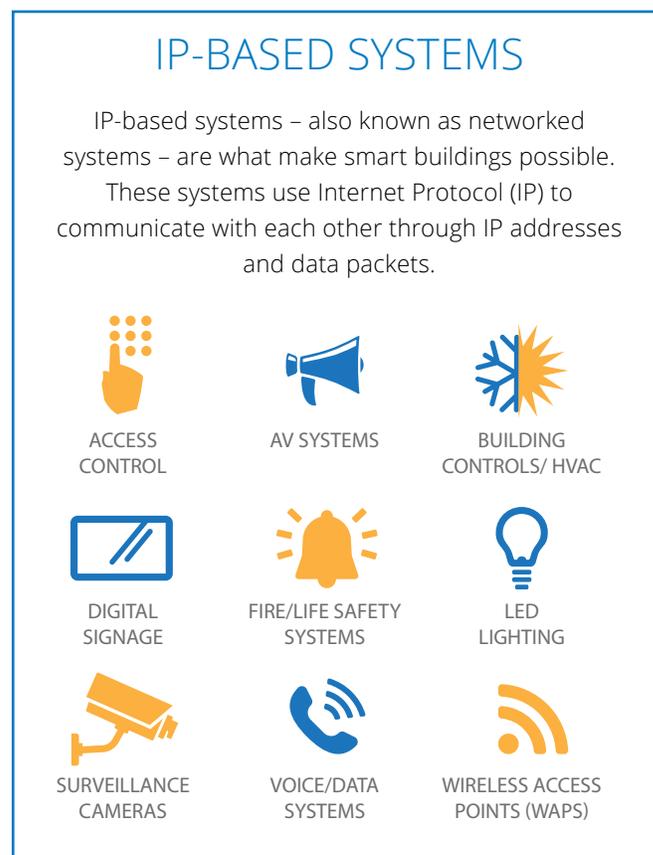
EASY MAINTENANCE

If an IP-based device goes down, it's easy to perform troubleshooting or maintenance on that device without needing to take the entire system offline or waiting until off hours. In most cases, there's no need for a middleware device; connections are created directly between the field

device and the enterprise network.

HOW DOES PoE SUPPORT IP-BASED SYSTEMS?

Power over Ethernet (PoE) cabling systems can help you make the most of IP-based systems and devices. PoE allows you to use one cable to transport data and power instead of two separate wires/cables: one for electricity and one for



data transmission. Carrying both through one cable offers many benefits for digital buildings that utilize IP-based systems:

IMPROVED MAINTENANCE by making moves, adds and changes quick and easy – without having to take the entire system down.

INSTALLATION FLEXIBILITY, allowing devices to be placed wherever it makes the most sense — without having to worry about where the nearest AC outlet is.

INCREASED RELIABILITY, with the opportunity to provide backup power to connected devices. If power were to go down, a single UPS unit supporting a PoE-powered patch panel could provide power for the devices using it.

REDUCED COSTS due to the lack of AC outlet installation requirements — and everything that goes with them (permits, licensed contractors, etc.).

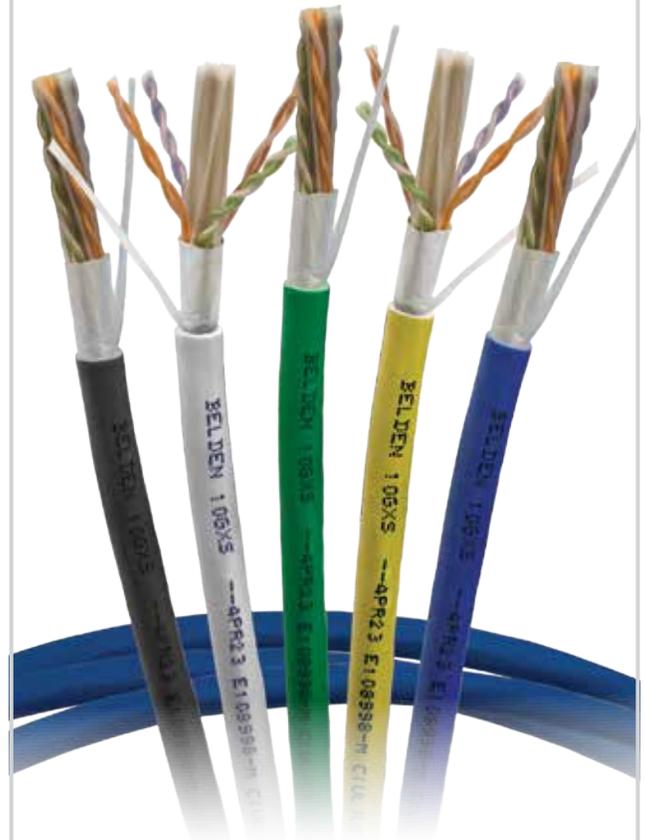
ENERGY EFFICIENCY, with fewer AC-to-DC conversion requirements.

Because of its larger-gauge diameter, ability to maximize power transmission and insertion loss margin that can handle heat generated from tightly packed cables, Category 6A cabling is recommended for PoE applications.

ABOUT BELDEN

Belden infrastructure is the foundation for digital buildings that can improve efficiency of your facility, enhance security, reduce operating costs, and adapt to changes with ease.

BELDEN 10GXS SMALL-DIAMETER CABLE



Belden's 10GXS small-diameter cable delivers more than 100W of power over the full length of 100m channel handling temperatures of up to 60C°. It supports 1, 2.5, 5 and 10GBASE-T without any deployment restrictions. It provides uniform heat dissipation, while its small outside diameter reduces cable space and weight by 25%.

Learn more at <https://bit.ly/2NfZhLT>

BELDEN
SENDING ALL THE RIGHT SIGNALS

A LOT OF



BY CURRENT, POWERED BY GE

KENT STATE UNIVERSITY PUTS STUDENTS FIRST WHILE SAVING BIG WITH LED

For Kent State University, “Students First” is a mantra that drives every decision from the president’s office to faculty excellence to campus operations. Part of this pledge is creating a safe and secure environment for students as they learn to thrive, and that’s where the university’s facilities management team is making a big impact with some bright ideas from Current, powered by GE.

- Parking lot security enhanced by higher lumen levels and better light quality
- University cuts electricity use 57 percent compared to old HPS lamps
- New LED fixtures can offer 20+ years of reliable operation

A TALL ORDER

Dix Stadium in Kent, Ohio, has been the football home of the Kent State Golden Flashes since 1969, with seating for 30,000 fans and parking to accommodate 9,000 cars. Like so many sports venues, however, lighting such a large space has its challenges.

“We have four 90-foot light poles in our stadium parking lot, and as part of our energy conservation project, we wanted to move to an LED solution,” explains Bob Misbrener, a project manager for Kent State’s Office of the University Architect.



“Only we were having trouble finding a high-mast fixture that would give us the output and energy savings we were looking for.”

Each lofty light pole was fitted with 12 high pressure sodium (HPS) fixtures that the facilities team had grown weary of. It was difficult to achieve full light coverage across the entire lot, and the quality of the light was noticeably poor compared to other LED solutions on campus. Not to mention each HPS

lamp consumed more than 1,000 watts, totaling 48,000 kilowatt hours of connected load. Kent State’s project team knew LED could deliver better performance and savings, but needed a product that could put light precisely where it was needed.

AREA LIGHTING INNOVATION

Turning to Brewer-Garrett, an Ohio Energy Services Company that provides professional building and engineering services, the university started to evaluate other lighting options. For years, Brewer-Garrett has helped Kent State reduce its operating costs through a variety of design/build projects using high-caliber utility analysis to create incredible efficiencies. And as part of the new lighting installation, Brewer-Garrett would take the extra step of guaranteeing Kent State all the energy savings the project was projected to create.

This award-winning facilities solutions company soon introduced university architects to Current and its new Evolve™ ERHM high-mast LED fixture that met Kent State’s criteria perfectly. Each unit delivers up to 57,000 lumens of light output and uses just 475 watts of electricity, which made it easy to brightly illuminate the Dix Stadium parking lot from end to end while using 57 percent less electricity.

“We’re saving enough energy to power 13 homes a year, and by doing so, we’re also eliminating 93 tons of greenhouse gas emissions,” Misbrener said. “On top of that, our electrical supervisor was wary about the load on the power cables that serviced the old lamps, but those concerns are gone now.”

Most importantly to Kent State, parking lot security has been enhanced thanks to the new lights. Current’s ERHM fixtures have improved security camera performance by providing a bright, neutral white light at 4000K (Kelvin, the color temperature for LED) and 70 CRI (Color Rendering Index, indicating how natural objects’ colors appear). By comparison, Kent State’s old HPS lamps achieved just 2100K at 22 CRI,

producing a dingy, orangish hue that could make details hard to discern.

EVEN MORE TO LIKE

Current was also the perfect partner for the job in the university’s estimation. As part of its service, the company conducted a photometric analysis to show Kent State how its new LED fixtures would improve parking lot optics with superior

light distribution. Above all, Misbrener appreciated that the university facilities management electrical team that would perform the retrofit was closely involved throughout this process.

"It was easy to get buy-in from everyone who had a hand in seeing how this product could make a difference, and how easy it would be to retrofit to our light poles," Misbrener said. "Brewer-Garrett and Current approached the installation in a thoughtful and studied way from start to finish, which helped things run smoothly. And what really made us comfortable was the 10-year warranty Current put behind its product. With so many lights and other needs on a campus this size, it's one less concern for the university."

Moving forward, facility management also has fewer maintenance worries considering Current's LED fixtures have a 100,000-hour design life. By comparison, the university's HPS lamps averaged just 24,000 hours of life. Based on 4,000 hours of run time annually, the new lights are expected to last 20 years or longer.

SAVING CAMPUS-WIDE

With the conversion of the Dix Stadium parking lot, roughly 90 percent of Kent State's outdoor lighting is now LED, including walkways and roadways.

In fact, since 2012, Kent State has reduced energy use at its main campus by 15.9 percent and at regional campuses by 21.8 percent through strategies including more efficient lighting and building systems, sensors and controls to adjust light and ventilation, and building setbacks for unoccupied zones and times.

"By addressing all aspects of campus energy, we're doing our part to minimize cost, which is all part of offering an affordable education," Misbrener added. "Current made it simple for us to save while putting students first."

For more information visit, <https://buy.wesco.com/content/043168-1>.

ABOUT CURRENT, POWERED BY GE

Current, powered by GE offers the most technologically advanced lighting solutions – backed by more than 100 years of innovation. From initial consultation and investment-grade auditing, through project analysis and implementation, Current, powered by GE will make retrofitting seamless.

Exceptional Performance and Value



ALBEO™ LED LUMINAIRE – ABV3

Exceptional Performance and Value for High and Low Bay Lighting

- Modular design: 1, 2, and 3 modules
- Lumen output: 9,000-60,000 lm
- Optics: 30, 55, 90, 120 degree optics with clear, diffused, or no lens options
- Cable/chain, rod, or pendant mount
- 3000K, 3500K, 4000K or 5000K CCT
- 70, 80, or 90 CRI
- Daylight, motion, and wireless controls
- 0-10V dimming
- Lifetime: L70 at 100,000 hours
- Five-year limited system warranty

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at Buy.WESCO.com.**

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current
powered by GE

PHOTOCONTROLS THAT GO THE



BY INTERMATIC

How Municipalities and Utilities Can Build for the Future with Intermatic Photocontrols



Effectively lighting public spaces and roadways is anything but easy for most municipalities. Diverse outdoor areas, shifting infrastructure needs and ever-changing energy standards require state and local governments to be highly adaptable yet cautiously pioneering when planning new projects. There are new and unexpected challenges at every turn.

While there's no one-size-fits-all answer, communities can find success by integrating solutions that are tailored to meet their unique locale. After all, the lighting needs of urban Los Angeles are a lot different than a small town in rural Wisconsin.

Balancing performance and reliability, Intermatic's NightFox™ Pro Series Photocontrols and Fixed Mount Photocontrols give municipalities across the map a winning edge. With a variety of customization options and robust technical features, these time-tested lighting controls are the perfect choice for communities of all types and sizes.

FINDING THE RIGHT APPLICATION

A significant factor in any successful lighting control installation is choosing a solution that's appropriate for the application.

In addition to roadways, photocontrols can help municipalities provide energy-efficient lighting support and improve safety on roadways and pedestrian paths, in outdoor parks and parking lots, near entryways and more.

They do this through simple and reliable dusk-to-dawn, ON/OFF control. As sunlight fades, photocontrols trigger lights to activate at a given light level and remain on until the following morning. The NightFox Pro Series, for example, can be customized to activate at any point in a range of 1.0 to 8.0 foot-candles to fit specific application needs.

The NightFox Pro Series uses a locking-type connection that ensures fast installation and quick changeover during photocontrol replacements. On the other hand, NightFox Fixed Mount Photocontrols are permanently affixed onto wall packs, outdoor light posts or other exterior lighting installations. Certain swivel-type models also allow the flexibility to adjust the photo eye based on the direction of the light.

When used in tandem with digital timer controls, city managers can establish a blend of scheduled and triggered lights to maximize energy efficiency while delivering a positive experience for residents.

A VERSATILE, LED-COMPATIBLE SOLUTION

When deciding which type of photocontrols to install, it's important for municipalities to consider several factors, including LED compatibility, voltage range, price and ease of installation. This is even more critical for organizations that have recently invested in converting traditional lights to high-efficiency LED fixtures.

LED light fixtures can help reduce maintenance issues and improve energy efficiency; however, it's easy for a smart investment to turn sideways if lighting control compatibility is overlooked.

High-current transients and inrush currents can easily damage lighting controls that are not explicitly rated for LED fixtures, making it critical for installers to pair new LED fixtures with photocontrols that are equal to the task.

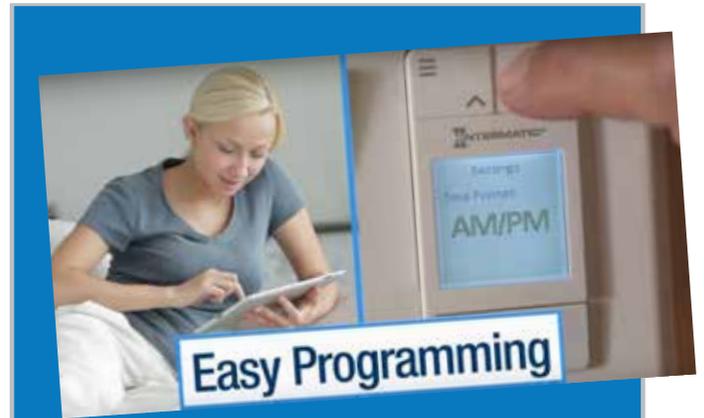
Built-in zero-cross technology in NightFox Pro Series and NightFox Fixed Mount Photocontrols minimizes the damaging effects of high inrush current events by switching relays at the zero-cross rapid point where there is no voltage present. In an AC power supply, where a sine wave represents the voltage, this usually occurs twice during each cycle.

Taking best information from NEMA 410 and UL standards, Intermatic engineers developed a comprehensive photocontrol testing methodology that helps customers maximize ROI.

BUILT FOR THE LONG HAUL

The less time municipalities spend worry about replacing components and solving maintenance issues, the better. Reliability is key.

NightFox Pro Series Photocontrols and NightFox Fixed Mount Photocontrols are warranted to match the 10- to



Watch the Ascend™ video!
www.intermatic.com/ascend



20-year lifespan of LED fixtures, offering contractors and city managers peace of mind. Once installed, the cost-effective, low-maintenance solution will last for years.

Before making a lighting control decision that could last a decade or more, consider the full range of customization options and long-lasting design of trusted Intermatic photocontrols. Learn more today at www.Intermatic.com/NightFox-Pro.

ABOUT INTERMATIC

A trusted lighting control manufacturer that's been ticking for more than 127 years, Intermatic offers dependable solutions that help customers save money through faster installation and reduce energy costs.



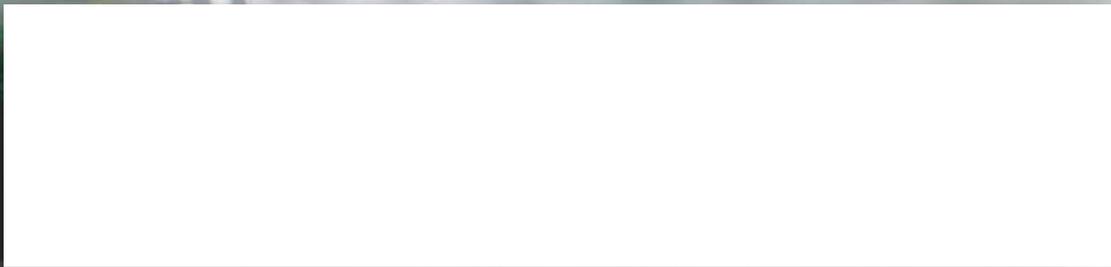
ALUMINUM PRE-INSULATED POWER BARS IPB AND IPBB SERIES

- Manufactured from high strength aluminum
- Dual rated for both aluminum and copper conductors
- Widest conductor range on the market: 14 sol. up to 1000 kcmil – allows for flexibility in the field and decreases inventory levels
- Connector design is ideal for splicing and tapping applications when conductor offset is required
- Commonly installed in panelboards, cable trays, raceways, ducts and troughs
- Various connector configurations include multiple conductor entries (2 through 14), single-sided conductor entry, double-sided conductor entry, and alternate conductor entry
- Available in both black and clear high dielectric strength plastisol which eliminates taping and reduces installation time
- Mountable design also available with this series (IPB-M and IPBB-M)
- All conductor ports are factory prefilled with oxide inhibiting compound
- All screw ports and conductor ports are fitted with removable plugs to provide protection against dirt and contamination. Plugs also provide electrical brush protection once connector is installed
- cULus listed to UL 486A-486B
- RoHS compliant





THE ABCs of



BY EIKO

UNDERSTANDING LED TUBE TYPES

With the proliferation of LED technology, government facilities across the country are being updated daily and replacing their traditional lighting products with the latest in efficient, money-saving LED technology. One of the most common lighting products found in buildings, from offices to warehouses, is the fluorescent T8 tube. These fluorescent tubes require external ballasts to control the current each fluorescent tube receives to prolong the life of the lamp and ensure it operates safely. As a result, replacing fluorescent tubes with LED is more complicated than simply swapping out the lamp itself. The lighting industry provides multiple types of LED tubes that each provide a unique solution depending on the needs of the facility's maintenance team.

TYPE A

Type A tubes can commonly be referred to “plug and play.” These tubes can function directly with an existing fluorescent ballast. It is usually the cheapest option and allows for the simplest installation process.

However, the lifetime of a Type A tube is dependent on the existing ballast. Once the existing ballast fails, the installer must replace the ballast to continue using the tube. In addition, the compatibility of Type A tubes varies depending on the manufacturer and model. Even within ballast models, different generations can have differing levels of compatibility. Furthermore, it is not uncommon to have a variety of ballast makes and models throughout a facility, causing even more compatibility issues.

While Type A tubes are generally the easiest and cheapest up-front option, using them in your facility can lead to additional costs and headaches down the road.

TYPE B

Type B LED tubes are powered directly from line voltage, therefore are not connected to a ballast. Line voltage operation ensures that once the lamp is installed, no further maintenance is needed.

There is one major drawback with these — some minor fixture modification is required before installation. Input wiring must be disconnected from an existing ballast and connected directly to the fixture sockets.

Additionally, there are two types of Type B tubes – single-end powered and double-end powered.

- Single-end tubes receive line voltage and neutral on one end of the tube and require a non-shunted socket
- Double-end tubes receive line voltage at one end with neutral at the other end and require shunted sockets.

It is important to understand what type of sockets an existing fixture uses before installing these tubes to ensure that they are wired correctly.

DUAL MODE

Some manufacturers provide a Dual Mode “hybrid” option that combines the best of both worlds. These tubes can function as a Type A, direct fit “plug and play” option with select existing ballasts. Once the ballast fails, simple rewiring allows the tube to function like a Type B on line voltage, and no ballast replacement is required. This is a great solution for quick, easy installation while also allowing your facility to continue using a lamp upon ballast failure.

Consider the needs of your facility before retrofitting fluorescent tubes with LED. Type A tubes provide the quickest and simplest installation, but lead to additional costs and maintenance problems down the road. If you can afford to incur a slower installation process and the up-front cost for fixture modifications, Type B tubes provide a maintenance-free solution. Dual Mode tubes allow for quick, easy installation while also allowing facilities to eventually make simple modifications to ensure they enjoy the full life of the lamp.

LitespanLED® Dual Mode T8 Tubes from EIKO operate on electronic ballasts or line voltage, offering flexibility and cost savings in any type of fluorescent retrofit application. DesignLights Consortium qualified and NSF Listed for commercial foodservice equipment, Dual Mode Tubes are a flexible, efficient solution for fluorescent troffers, highbays, cove lighting, cold storage and more.

ABOUT EIKO

EiKO Global, LLC is celebrating its 40th year of delivering the industry's best lighting products. Carrying over 5,000 SKUs and the broadest selection of any manufacturer in its class, EiKO is committed to providing innovative products, unique solutions and unmatched support to its customers.



LitespanLED® Dual Mode T8 Lamps

BALLAST BYPASS/ ELECTRONIC INSTANT START BALLAST COMPATIBLE

- Hybrid dual mode for use with instant start electronic ballasts or direct line voltage
- Direct replacement for conventional linear fluorescent tubes
- Instant full brightness
- Frosted glass lens reduces visual glare
- Environmentally friendly; no mercury or lead
- 5 year product warranty
- Choice of 3500K, 4000K or 5000K CCT
- Up to 80% energy savings
- Ultra-high performance LED delivers 120 lpw
- Suitable for use in totally enclosed fixtures



Selection. Solutions. Simplicity. Eiko.com



TYPE A AND TYPE-C™ USB CHARGER/ TAMPER RESISTANT RECEPTACLE

Leviton USB Charger Devices offer superior charging power for electronic devices. Two high-powered vertical USB Ports, one Type A and one Type-C, deliver a combined total of 5.1A charging current and 25+watts of power. Smart chip technology recognizes and optimizes the charging requirements of individual devices and the Type-C port enables the cables to be

Charge faster and enjoy your devices more!
More info at: www.leviton.com/usb



LEADING THE GREEN

BY LEVITON

“As the largest consumer of energy in the U.S. economy, the federal government can and should lead by example... to reduce greenhouse gas emissions, increase energy efficiency, conserve water, reduce waste, and use environmentally-responsible product and technologies.”

— President Barack Obama, Executive Order 13423 signing, October 2009

Over the past several years, several federal Orders and Acts have introduced a host of mandated targets to reduce federal energy consumption. One of the biggest is the Data Center Optimization Initiative (2016), which requires agencies to develop and report on data center strategies; transition to more efficient infrastructure, such as cloud services and inter-agency shared services; leverage technology advancements to optimize infrastructure; and provide quality services for the public good.

Other regulations cover everything from improve water efficiency to deploying renewable energy sources, constructing high-performance sustainable federal building, and purchasing energy-efficient products. In addition, many federal agencies, the Army and Navy, and numerous states and municipalities require that their publicly funded construction and major renovation projects be built to LEED specifications.

NEW CODE REQUIREMENTS FOR LIGHTING CONTROLS

- ASHRAE 90.1 (2010/2013/2016)
- Title 20 and Title 24 (2016 Part 6)

Energy costs are rising faster than ever before, making the reduction of energy consumption by businesses an increasingly more powerful competitive advantage. With over 38% of a typical business' energy bill related to lighting that puts energy saving controls for lighting squarely at the center of any effort to reduce energy expenditures.

REDUCE ENERGY USED FOR LIGHTING IN GOVERNMENT FACILITIES

Experts predict that over the next 30 years, the current U.S. building stock of 300 billion square feet will change dramatically, with 52 billion square feet being demolished, 150 billion square feet remodeled and another 150 billion square feet being added.

With more than 500,000 buildings, Government agencies can lead the nation in energy efficient building design, construction and operation. As a major consumer spending as much as \$200 billion annually on products and services, Government agencies can help foster markets for emerging technologies and promote energy efficiency.

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Leviton's Government Solutions Program provides the complete solution for the development of voice and data networks, from planning and purchasing all the way to certified installation. Working through their manufacturing and distribution partners, they produce the best-valued Made in America products on the market today. And with their network of certified contractors, government customers receive a total solution, including nationwide and international contractor coverage. As a leading manufacturer with a 100-year history, they are proud to be an industry leader you can count on.



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SEVEN STEPS TO LIGHTING CONTROLS

BY RAB LIGHTING

Lighting controls have seen tremendous growth and innovation in recent years with lots of new features and entrants into the market. With all of the new options, customers should feel more empowered than ever. To get the best system for your site, consider these seven steps.

1. CHOOSE THE RIGHT SYSTEM ARCHITECTURE

Lighting controls systems can easily be divided into wired and wireless solutions. Wired solutions require wires to communicate with each fixture and are generally only feasible with new construction. Newer, wired systems use PoE (power over Ethernet) to power and control the system with a single cable, but PoE offers its own challenges. PoE typically needs to be serviced by an IT department, is difficult

to expand, requires costly switches and can only be run a short distance before losing power. Every PoE fixture requires wiring back to your switches and server room. Sites with outdoor lighting and multiple buildings are almost impossible to effectively control with PoE solutions. Wireless solutions are at the forefront of lighting control technology and offer the most advanced solutions — perfect for retrofit and new construction — but not all wireless systems are created equal. Wireless systems generally function as either

a point-to-point (P2P) system or a wireless mesh. With P2P systems, each device needs to be within range of a central hub/communication device — similar to a computer connecting to a router. This limits the scale of the system to the range of the hub or requires wiring hubs together eliminating many of the advantages of a wireless system. Wireless mesh is the best wireless solution and offers near limitless expansion. With a wireless mesh, each device on the network extends the range of the network, so signals can be repeated without range restraints.

2. UNDERSTAND SYSTEM FEATURES AND CONTROL STRATEGIES

Control systems vary greatly in their capabilities. When choosing a system, make sure it has all of the features for your specific needs. At a minimum, systems should include the following:

- Astronomical Scheduling (Time Clock Replacement): Automatically adjust lights at predefined times such as noon or sunset
- BACnet Integration: Integrate with building management systems (BMS)
- Daylight Sensing: Dim lights to account for natural light in a space
- Demand Response: Dim lights to account for utility incentives during peak energy usage
- Dimming: Adjust the brightness of a fixture
- Occupancy and Vacancy Sensing: Adjust lights automatically when a room is occupied or unoccupied
- High End Trim: Set a maximum light output for fixtures
- Remote Management: Control your lighting system off-site such as with a cell phone or a laptop in a different office
- Scenes: Control multiple fixtures simultaneously with specific on/off/dim settings for each fixture
- User Controls: Create user restrictions, so users have access to limited or complete controls

3. CHECK APPLICATION COMPATIBILITY

Some lighting control systems are application-specific while others are capable of handling many different settings. Application-specific systems are available for offices, warehouses, and outdoor lighting. While these systems may function acceptably for their intended application, they're often missing key features, and it's important to keep in

The most advanced lighting control system is also the easiest to manage.



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mind the ability to expand the system in the future. The best systems are capable of controlling lights for all applications.

4. CONFIRM FIXTURE COMPATIBILITY

Look for a system that works with a wide variety of fixtures. Integrating the controls in a fixture can save both time and money, but shouldn't be the only option. Make sure the system will work in all situations now and in the future.

5. CHECK EASE OF USE

Older systems require physical access to control panels in your electrical closet and are complicated to set up. Other systems require expensive servers that are prone to technical issues. Some are so complicated they require special training to control. Avoid these and look for cloud-based solutions with simple to use software. There are full-featured solutions that are intuitive, so do your research and find the right system.

6. CONFIRM SYSTEM IS FUTURE-PROOF

Lighting control systems are constantly evolving, so choose a system that will continue to be supported and grow with your business. The best systems add features via cloud updates and release backward compatible products, so you'll always have the latest features even if your system is several years old.

7. CALCULATE SYSTEM COST

Calculate the true cost of the lighting controls solution. Look out for additional fees such as installation costs, upcharges for service and set-up, expensive extended warranties, and monthly cloud hosting fees. Some systems qualify for utility rebates which can have a huge effect on electric bills. Good systems can reduce your energy usage for lighting by up to 68%. These savings could pay for the entire system in a few years.

ABOUT RAB LIGHTING

RAB Lighting is committed to creating high quality, affordable, well-designed, and energy-efficient LED lighting solutions for your indoor, outdoor and lighting control applications that make it easy for distributors to sell, electricians to install, and end-users to save energy. Founded in 1946, RAB has a vibrantly growing infrastructure of manufacturing facilities and engineering capabilities that ensure great product design and quality.





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