June 2024

THE MOST UNIQUE AND RELIABLE RESOURCE FOR TODAY'S ELECTRICAL CONTRACTOR

THE ELECTRIC CURRENT

Fire Authorities Adopt Early Thermal Runaway Detection Technology

RHINO

SWITCHBOARD MATS

FUSEBOX SAFETY MAT™

Rhino Switchboard Mats For The "If" in Life.

Easily carried to job or construction sites, Fusebox Safety Mat™ by Rhino provides portable insulation when working in close proximity to exposed energized equipment. around substations, transformers, switches, electrical panels, or high-voltage equipment. Fusebox Safety Mat™ should be used in any area where Health and safety risk assessment shows a possibility of high-voltage shock.

Safety Focused. Results Driven

Rubber-insulating gloves, insulated hand tools, and switchboard-insulating mats are vital components of a successful PPE system. All should be used in conjunction with engineering safeguards and associated work practices.

Quality You Can Count On

All are tested to ASTM D178/ANSI J6.7 specifications with certification printed on the back.
Two sizes available 2ft X 3ft and 3ft X 3ft,
Two thicknesses 1/2" and 1/4"
Available at most Electrical and Safety Supply Houses,
ask for Rhino Fusebox Safety Mat™,
Home Depot online or
contact us at
713-228-5543 / Info@rhinomats.com

www.rhinoswitchboardmats.com

Extreme-Duty Series Class 4
1/2" thick Corrugated Surface
Test Voltage 50,000 VAC
Proof Test 40,000 VAC
Recommended 36,000 VAC

Heavy-Duty Series Class 2
1/4" thick Diamond Surface
Test Voltage 30,000 VAC
Proof Test 20,000 VAC
Recommended 17,000 VAC

GRACE
CONNECTED SAFETY

LONE WORKER PROTECTION
FALL PROTECTION
SUSPENSION TRAUMA PREVENTION

SECURE ½ MILE LINE-OF-SIGHT

GRACE GATEWAYS

Iridium Satellite/Cellular
Mobile or Portable Worksite Models
SALTI™ System Loop Test Indicator
Supports up to 20 Grace Pendants

ASSIGNED MONITORING ATTENDANTS

Grace Web Portal Dashboard
Custom Check-In Schedule
TEXT/Email Notification
Receive a GPS Map Link
Check-In System

WORKFORCE® LONE WORKER PENDANT

Fall Detection
Manual Panic Button
Motion Detection
GPS Location

LEARN MORE

GRACECONNECTEDSAFETY.COM

TEC Contents • *June 2024*

THE ELECTRIC CURRENT
THE MOST UNIQUE AND RELIABLE RESOURCE FOR TODAY'S ELECTRICAL CONTRACTOR

Vol. 24 Issue 6

PRESIDENT
Glen Hobson
205-441-5591
glen@handfmedia.net

ASSOCIATE PUBLISHER
Steven Goodwin
205-624-2181
steve@handfmedia.net

ADMINISTRATIVE DIRECTOR
Steven Hobson
steven@handfmedia.net

EDITOR
Brandon Greenhill
brandon@handfmedia.net

CREATIVE/ WEB DIRECTOR
Jacklyn Greenhill
jacklyn@handfmedia.net

P.O. Box 1568 • Pelham, AL 35124
Phone: 205-441-5591 • Fax: 205-624-2181
www.theelectriccurrent.com
info@theelectriccurrent.com

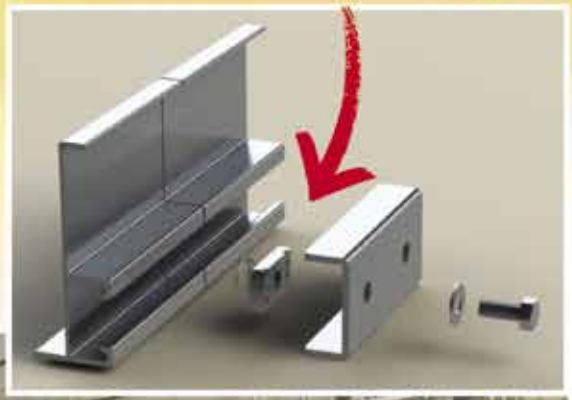
SDP Southern Digital Publishing

The Electric Current™ is published twelve times a year on a monthly basis by Southern Digital Publishing, Inc. ***The Electric Current™*** is distributed free to qualified subscribers. Non-qualified subscription rates are $57.00 per year in the U.S. and Canada and $84.00 per year for foreign subscribers (surface mail). U.S. Postage paid at Birmingham, Alabama and additional mailing offices.

POSTMASTER: Send address changes to
Southern Digital Publishing, Inc. P.O. Box 1568
Pelham, AL 35124
PRINTED IN THE USA

Zip

- Fast Installation
- Easy to Install
- Aluminum Lightweight



SINCE 1994

Aluminum Cable Tray Systems

Made in Canada

1 866 818 0299
info@ziptray.ca
www.ziptray.ca

CLASSIFIED UL SA

Zip Cable Tray Systems Inc • 97 Hymus Blvd. • Pointe-Claire, QC • H9R 1E2

Why UL1008 Certified Transfer Switches Are More Important Than Ever

With an ever-growing need for emergency backup power systems in hospitals, healthcare facilities, data centers and other public facilities, it is critical to have transfer switches that ensure reliability and safety.

Underwriter Laboratories (UL) conduct rigorous independent research, analyze safety data and risks, and develop standards to help safe commercialization of technologies. The UL 1008 standard was first created in 1970 for transfer switch safety performance.

> UL 1008 is one of the most rigorous safety standards for transfer switches in emergency power systems. To meet UL 1008 standard, transfer switches are tested as a complete assembly on performance endurance, safety and reliability by an independent testing and certification agency. They are evaluated in accordance with Articles 517- healthcare facilities, 702-optional standby systems of the NEC (ANSI/NFPA 70) and the NFPA for healthcare facilities (ANSI/NFPA 99). Today, most healthcare facilities and facilities that have legally required emergency power generally only accept UL 1008 transfer switches.

Performance of emergency power systems and their components, such as transfer switches, is so critical to safety that in NFPA's 2017 National Electrical Code® (NEC®) there is a new provision outlined in article 700.3(F) for emergency systems.

It states, "If the emergency system relies on a single alternate source of power, which will be disabled for maintenance or repair, the emergency system shall include permanent switching means to connect a portable or temporary alternate source of power, which shall be available for the duration of the maintenance or repair."

To meet the new provision, you can use a UL 1008 listed Ronk Series 4+ manual transfer switch when switching from a permanent source of power to an alternate source.

The new provision also states that: "The permanent switching means to connect a portable or temporary alternate source of power shall comply with the following:

(1) Connection to the portable or temporary alternate source of power shall not require modification of the permanent system wiring.

(2) Transfer of power between the normal power source and the emergency power source shall be in accordance with 700.12.

(3) The connection point for the portable or temporary alternate source shall be marked with the phase rotation and system bonding requirements.

(4) Mechanical or electrical interlocking shall prevent inadvertent interconnection of power sources.

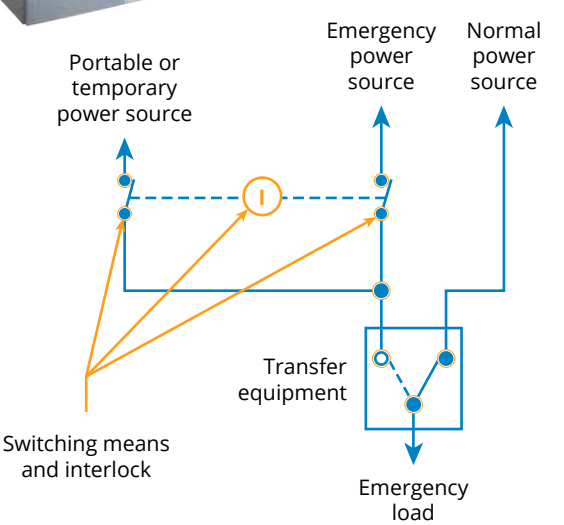
(5) The switching means shall include a contact point that shall annunciate at a location remote from the generator or at another facility monitoring system to indicate that the permanent emergency source is disconnected from the emergency system.

It shall be permissible to utilize manual switching to switch from the permanent source of power to the portable or temporary alternate source of power and to utilize the switching means for connection of a load bank."

For more information, contact Ronk to learn more about our Series 4+ Manual Transfer Switch and how it may meet your application need.

RONK SERIES 4+

UL 1008 NON-FUSED MANUAL TRANSFER SWITCH



Find. Fix. Fast.

EMSCO
ELECTRIC MOTOR SUPPLY COMPANY

- Busway & Plugs
- Circuit Breakers
- Fuses
- Motor Control Centers
- Panelboards
- Safety Switches
- Switchgear
- Transformers

If we don't have what you're looking for, **we find it.**

GET 10% OFF
YOUR FIRST ONLINE ORDER

With code **ELECUR10**

Home of Thousands of Transformers, Breakers, Switches, Bus Plugs, Circuit Breakers and Motor Controls.

250,000^{sf} of inventory

Every product certified

Quick Ship
Fast lead-time

EMSCO stocks obsolete, reclaimed, and hard to find electrical components.

www.EMSCOMN.com

24-HOUR HOTLINE

Get what you need, when you need it.

CONTACT US

800.328.1842

24-Hour Emergency Line

Advanced Emergency Responder Communication Enhancement Systems (Erces) Eliminate Potential Dead Zones In Commercial Buildings To Help First Responders Stay Connected

First responders such as fire, EMS and police depend on reliable two-way radio communication when lives and property are at risk. That's not always an easy task in many buildings. In-building radio signals are often absorbed or blocked by structures that are larger, underground or constructed of concrete or metal. Additionally, building features designed to create more sustainable facilities such as low-E glass windows can attenuate the signal from public safety radio systems. When this occurs, weak or non-existent signals result in radio communication "dead zones" within commercial structures that can jeopardize coordination among and the safety of first responders during an emergency.

As a result, most fire codes now mandate the installation of Emergency Responder Communication Enhancement Systems (ERCES) for both new and existing commercial buildings. These advanced systems boost the signal inside the building, providing clear, two-way radio communication without dead spots.

"The challenge is that first responders operate on many different frequencies which vary significantly from city to city, so the ERCES equipment must be designed to amplify only the specific assigned channels," says Trevor Mathews, Wireless Division Manager at Cosco Fire Protection, a provider of business fire suppression and life safety systems for more than 60 years. The company has offered dedicated in-building radio communication system installation services for the past four years.

Mathews adds that this design usually involves tuning the ERCES to prevent signal interference with other frequencies and avoid running afoul of the FCC, which can levy significant fines when violations occur. In addition, companies often must install the entire system before the certificate of occupancy is issued. To meet the tight deadlines, installers rely on ERCES OEMs to quickly deliver the system components.

PANELGUARD®

Industrial-Grade Surge Protection

Defend Industrial and Manufacturing Facilities from Harmful Power Surge Events

New **PANELGUARD+ M Series and P Series Surge Protective Devices** offer even greater protection than legacy PANELGUARD solutions and are specifically designed for the most rigorous industrial and manufacturing applications.

PANELGUARD+ solutions are highly customizable and deliver up to 10 modes of protection. They're an excellent fit for major new construction and renovation projects (e.g., distribution centers, large industrial facilities).

Choose PANELGUARD L Series and H Series for light commercial and industrial applications. The robust surge protective devices provide up to 7 modes of protection and can be easily installed at individual disconnects, sub-panels, distribution panels, and service entrance locations.

Scan the QR code to view additional product information.

Learn more today at **Intermatic.com/PANELGUARD**

INTERMATIC®

State-of-the-art ERCES are available that arrive "custom-tuned" by the OEM to the specific required UHF and/or VHF channel. The contractor can then further optimize the device onsite to the actual band frequencies with channel selective adjustments. The approach facilitates meeting all codes and requirements while reducing overall installation cost and complexity.

Effective ERCES Equipment

ERCES were first introduced in the 2009 International Building Code. The latest codes – such as IBC 2021 Section 916, IFC 2021 Section 510, 2019 NFPA 1221 Section 9.6, NFPA 1 2021 Section 11.10, and 2022 NFPA 1225 Chapter 18 – require all buildings to have an approved level of emergency communication coverage for first responders.

ERCES systems function by connecting through an over-the-air link that the installer optimizes to the public safety radio communications tower network, using a rooftop directional antenna. This antenna is then connected via coaxial cable to a bi-directional amplifier (BDA), which increases the signal level to provide sufficient coverage within the building, based on life safety standards. The BDA is connected to a distributed antenna system (DAS), a network of relatively small antennas installed throughout the building that serve as repeaters to improve the signal coverage in any isolated areas.

In larger buildings of 350,000 square feet or more, multiple amplifiers may be required to drive an adequate signal level across the system. Besides the building's square footage, other criteria can also affect the number of amplifiers required, such as the building design, type of construction materials used, and the density of construction.

LIGHTING YOUR WAY FORWARD

Contractor Lighting gives you the solutions for success.

Free shipping on orders $300+ | All product specs at your fingertips online

Get access to our free Lighting Layout tool or we'll create a layout for you.

877-664-5483 contractorlighting.com

FROM THE INDUSTRIAL

TO THE OFFICE

AND FOR ALL EMERGENCIES

We're experienced Lighting Professionals who can't wait to talk lighting with you.

In a recent application, Cosco Fire Protection was tasked with installing an ERCES along with a comprehensive fire and life safety system at a large distribution center in Washington. To meet municipal requirements, Cosco Fire needed to install an ERCES tuned to VHF 150-170 MHz for the fire department and UHF 450-512 for police. The building was due to receive its certificate of occupancy in several weeks, so installation needed to be completed quickly.

To streamline the process, Cosco Fire selected the Fiplex by Honeywell BDA and fiber DAS system, from a leading manufacturer of commercial building fire and life safety systems.

The compliant and certified system was developed to reliably provide superior RF amplification and coverage without noise, enhancing two-way radio signal strength inside buildings, tunnels and other structures. The system is specifically designed to meet NFPA and IBC/IFC code compliance with the UL2524 Second Edition listing.

According to Mathews, one vital aspect that sets the ERCES apart is the ability of the OEM to "tune" the device to the channels used before shipping. The contractor can then further optimize the BDA's RF tuning onsite to the precise frequency required with channel selective, software programmable or adjustable bandwidths. This eliminates the issue of wideband transmission in highly congested RF environments, which can otherwise cause outside interference and potentially lead to FCC fines.

Mathews points out another aspect that distinguishes Fiplex BDAs from other digital signal boosters: the availability of a dual-band option for dedicated UHF or VHF models.

"Combining the UHF and VHF amplifiers simplifies installation because you have one panel instead of two. It also reduces the necessary wall space, the power requirements, and potential points of failure. Annual testing is also easier," says Mathews.

With conventional ERCES systems, fire and life safety companies must often source third party components to supplement the OEM's package.

For a previous application, Mathews found it "difficult to get conventional ERCES equipment to work.

evluma

RoadMax Roadway LIghting
RX1 | RX2 | RX3

RoadMax®

Redefine the Road Ahead

LEDs MAGAZINE BRIGHTSTAR AWARDS HONOREE

Evluma builds off a legacy of low-glare lighting with RoadMax, a new family of roadway luminaires. For utilities and municipalities concerned with disability glare, meeting stringent roadway specifications, and achieving an efficient use of existing poles and roadway infrastructure this is a game changing luminaire.

evluma.com sales@evluma.com 425-336-5824

We ultimately had to turn to a third party for the [signal] filters needed because the OEM wouldn't provide them." Mathews also said the lead time to receive the equipment was several months when he needed it in weeks.

In contrast, the Fiplex by Honeywell equipment was delivered in only a few weeks.

"With other suppliers, it could take 8-14 weeks to receive an amplifier," explains Mathews. "Now we can get a custom tuned amplifier and install it with the DAS in 5-6 weeks. That is a game changer for contractors, particularly when there is a tight window for the installation," says Mathews.

For building developers, architects or engineering firms wondering if an ERCES will be required in a new or existing building, the first step is to consult with a fire protection/life safety company that can conduct an RF survey of the space.

The RF Survey is accomplished by measuring the downlink/uplink signal strengths in decibels-milliwatts (dBm) using special measuring devices. Results are submitted to the authority with jurisdiction to determine if an ERCES system is required or if a waiver is appropriate.

"Testing early is preferable to reduce cost, complexity and simplify installation if an ERCES is required. If the building fails an RF survey at any point in time, whether completed construction is at 50%, 80% or 100%, the ERCES system will have to be installed, so testing earlier is better before installation becomes more difficult," says Mathews.

He notes there can be additional challenges when conducting RF testing in structures like warehouses. An empty warehouse may not require an ERCES, but the signal strength can change dramatically in areas of the facility after racking and other equipment is installed, and merchandise is added. If a system is installed once a warehouse is already operational, the fire and life safety

AMERICAN MADE. RONK SOLID.

RONK Electrical Industries not only designs and manufactures high-quality products and solutions that help lower costs, increase efficiency, and stabilize power usage, but also provides you and your customers with vast industry knowledge and unbeatable customer service and support.

RONK's Roto-Con® Rotary Phase Converter units manufacture three-phase current from a single-phase supply. This unit is built to allow the use of three-phase motors and equipment where installation of a commercial three-phase supply is impractical or too expensive. Available in Type P, Type D-1, and Type CP, these units are flexible in operating a range of different loads for multiple applications to meet your unique needs, making them easy to install and maintain.

RONK

Sales: 1-800-221-7665 | **Service:** 1-217-563-8333

www.ronkelectrical.com

RONK ROTO-CON®

ROTARY PHASE CONVERTER

COMMON APPLICATIONS

- Metal and woodworking equipment
- Grain handling and milling
- Battery chargers
- Print shops
- Welders
- Food processing machinery
- Irrigation pumps

company must work around the existing infrastructure and any personnel.

"It is much harder to install ERCES components in an occupied building versus an empty warehouse. Installers may need to use lifts to reach the ceiling, fix cable or place antennas, which is difficult to do at in a fully operational structure," says Mathews.

If installation of the system interferes with the issuance of a certificate of occupancy, this bottleneck can significantly delay a project.

To avoid delays and technical challenges, commercial building developers, architects and engineering firms can benefit from an expert contractor's familiarity with the ERCES requirements.

With quick shipment of an advanced ERCES tuned by the OEM to the required RF channel, a skilled contractor can install and further optimize the device to the specific local band frequencies used with channel selective adjustments. The approach expedites the project and compliance, enhancing safety during an emergency.

For more information, contact Dawn Wotapka, Director of External Communications at Honeywell, 715 Peachtree Street, N.E., Atlanta, GA 30308; email: dawn.wotapka@honeywell.com.

www.honeywell.com •

"When Disasters Strike, First Responders Rely On Us!"

Our complete control, communication and convenience Utility Truck Console is becoming the new standard for truck fleets of all sizes. Loaded with standard and optional features that maximize ergonomics, productivity, and fleet/telecom standards into a one exceptional Mobile Console Solution.

MOBILE DESK
MOBILE OFFICE SOLUTIONS
1-877-663-3375
www.mobiledesk.com

By Del Williams

Fire Authorities Adopt Early Thermal Runaway Detection Technology

For backup power systems, a de facto industry standard is increasingly being installed in Battery Energy Storage Systems to help tame the dangers of thermal runaway.

At data centers across the United States, demand for Battery Energy Storage Systems (BESS) is rapidly increasing. Comprised of an interconnected series of batteries, BESS are self-contained, rechargeable battery units that store energy, which they can then disperse in case of power loss. This makes BESS battery backup systems an ideal backup power source for data centers.

Despite the significant benefits, BESS are subject to thermal runaway conditions because, at their core, they utilize rechargeable batteries. However, the risks associated with the use of BESS can be exacerbated with the implementation of lithium-ion (Li-ion) batteries. In Li-ion BESS scenarios, thermal runaway can occur due to thermal abuse or overcharging, which can cause excess heat to create a reaction that increases the internal temperature of the battery. The increase in heat can cause the electrolyte solution inside of a Li-ion battery to begin to turn into a vapor.

If left unchecked by built-in system protections or the Battery Management System, this process can continue to increase temperatures and pressure inside of the hermetically sealed battery cell, eventually causing

*"As a safety professional, you always want your workers to have access to leading edge safety tools that improve safety and focus. Working with **COOLSHIRT SYSTEMS** over the past two years allowed me to help design a tool **by lineman for lineman.***

*The **A.R.C. Hybrid Cooling System** by **COOLSHIRT SYSTEMS** allows lineman to remain more focused and less fatigued by reducing their core body temperature in extreme environments, therefore reducing the possibility of unintended accidents."*

-James "Jim" Bonner
Compliance Coordinator- Retired
Alabama Power

A.R.C. Hybrid Cooling System

Complete Arc Rated Portable Cooling Solution

Developed in conjunction with major power companies for use in extreme heat conditions, the **A.R.C. Hybrid Cooling System** uses liquid cooling to reduce fatigue, injury, and heat stress related illness.

Designed specifically for use by linemen, the **A.R.C. Hybrid Cooling System** features a compact design with a custom woven strap mounting system. The use of S-hooks offers the versatility of mounting inside or outside of the bucket. The system includes our mobile ice based cooler, a 7 hour lithium ion battery with charger and a **CAT 2, 12 CAL** rated Liquid Cooled Vest for **70E Arc Flash protection.**

Designed with portability in mind, measuring **6" x 6" x 20"** and weighing in at **less than 10 lbs dry,** the unit is entirely self-contained and built to last with a 20,000 hour pump.

A.R.C. Hybrid Cooling System
2002-0017

COOLSHIRT®
LIQUID COOLED GARMENTS

Office: 800-345-3176 **Fax: 678-289-4325** **www.coolshirt.com**

the battery cell separator to melt down and degrade.

This stage of Li-ion battery failure is referred to as "off-gassing" or "initial cell venting." Failure to address the continued increase in heat at this stage will result in the internal temperature of the battery continuing to rise until a point of thermal runaway, which can propagate into fires in adjacent cells and other combustibles in the area.

Although smoke and gas detectors are required by code in BESS, smoke detectors are searching for particles of combustion, which are not present until thermal runaway occurs. Most gas detectors are designed to manage threats in lead-acid battery BESS and so detect either a generic hydrocarbon gas or quantity of gas at one physical location.

Due to these factors, traditional smoke and gas detectors used in a Li-ion BESS may only indicate a thermal runaway event once it is already occurring inside the container, rather than providing sufficient warning to prevent a fire.

Now, a growing number of fire authorities and life safety system experts are addressing this issue by recommending detection technology that provides a warning far earlier than traditional monitoring and detection methods. This helps to stop thermal runaway before it begins, increasing data center safety and reliability.

The approach is not only being adopted throughout the country but also is increasingly being adopted by fire authorities as a de facto standard for Li-ion BESS applications.

"Today, the new technology for preventing thermal runaway is ahead of the [NFPA] code and most Authorities Having Jurisdiction (AHJs) are open to technology that satisfies the code's intent. So, the consensus is moving toward installing Li-ion-specific early warning detection systems over more generalized gas detection technologies," says Kenneth Pope, President and Owner of Pope Technologies LLC, a fire alarm and smoke control life safety systems designer and installer. The company has offices in Arizona, Nevada, Texas, and Utah, and Pope has worked in the industry for more than 25 years.

GEN-Y HITCH®

TRUST THE SAFEST HITCH ON THE MARKET

HOME OF THE TORSION FLEX TECHNOLOGY

CREATES A SMOOOTHER RIDE, PROTECTS CARGO, REDUCES WEAR AND TEAR ON TRUCK AND TRAILER!

MEGA-DUTY

BOLT-ON ADJUSTABLE HITCH

MEGA-DUTY

ADJUSTABLE DROP HITCH

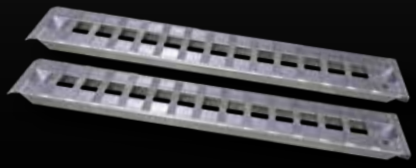
BOSS

TORSION-FLEX ADJUSTABLE DROP HITCH

SPARTAN

TORSION-FLEX GOOSENECK COUPLER

HEAVY-DUTY ALUMINUM RAMPS



AND **MORE!**

MADE IN THE USA

LEARN MORE AT GENYHITCH.COM
FOLLOW US @GENYHITCH

Seeking Earlier Li-ion Detection, Greater Safety

With Li-ion BESS applications expanding around the globe, the need for better protection from thermal runaway is increasing and becoming a crucial topic among fire departments and other AHJs. The danger is emphasized by incidents such as a runaway Li-ion battery explosion that injured nine first responders at the McMicken Energy Storage facility in Surprise, Arizona in April 2019.

So, when an area data center decided to install a large quantity of Li-ion BESS, the local AHJ required that gas detection solutions be retrofitted into the eight existing BESS containers as well as additional BESS containers planned for the site.

To satisfy the requirements for the project, the AHJ contacted Randy Snow, Managing Principal at Progressive Edge Technologies, a Phoenix, Arizona-based fire and life safety system consulting firm. Snow considered code-approved gas detection systems used in BESS, but wishing to provide a more robust solution, he began searching for alternatives. He consulted with Kenneth Pope at Pope Technologies, who recommended Li-ion Tamer, a detector that specifically targets the off-gas electrolyte vapor that is characteristic of a Li-ion battery cell vent release.

Li-ion Tamer by Honeywell consists of two primary components: a controller and a network of off-gas sensors installed above the battery racks. The sensors utilize sophisticated detection algorithms to monitor Li-ion BESS and provide an alert to the initial venting of electrolyte solvent vapors. This early warning helps prevent fires by allowing increased time to shut down the charge to the affected rack(s) in the estimated 8-15 minutes between off-gassing of the electrolyte vapors and the beginning of thermal runaway.

The Li-ion Tamer controller is designed to diagnose when and where the off-gassing of electrolyte vapors is occurring, with an electrolyte solvent release of just a single battery cell. This enables quick alarm initiation and immediate mitigation measures such as opening louvres, engaging exhaust fans, and alerting occupants and first responders of the off-gassing event via the NOTIFIER Fire Alarm Control Panel.

“The AHJ liked the idea of providing an early warning detection system along with a means of suppression before thermal runaway,” says Snow.

Still, the AHJ had to approve safety measures involving a gas detection requirement. “We had a fire protection engineer review our documents and confirm that our use of Li-ion Tamer would satisfy the AHJ’s gas detection requirement for their jurisdiction. We got their blessing and approval,” says Snow.

Snow states they now utilize Li-ion Tamer in the data center BESS, along with other fire detection and suppression technologies. This includes a VESDA aspirating smoke detector for early warning smoke

ASME
OSHA

SAFETY FIRST | OPTIMIZE YOUR WORKSPACE

Available in both CHAIN & CABLE Configurations

- Customizable height and reach to best fit your space.
- Ergonomic positioning for easy low strain use.
- Create a safe, efficient work environment.

MADE IN THE USA

CUSTOM MODIFICATIONS AVAILABLE

The Sky Hook is your personal safety lifting solution, preventing lifting injuries while saving you both time and money!

800-4-SKYHOOK

800-475-9466 • 208-365-5770

www.skyhookmfr.com

SKY HOOK
ATTCO, Inc. USA
by SYCLONE ATTCO SERVICE

detection because the heat from a combustion fire in the BESS can trigger a Li-ion thermal runaway event as well.

The VESDA VLF aspirating smoke detection system was chosen for this task. The VESDA system continuously draws in small samples of air through holes in piping or tubing and evaluates it for smoke particles at a central location. This provides very early smoke detection capability, even before smoke becomes visible. The system provides several programmable alarm thresholds that help enable a swift escalating response, which can help to stop a fire and minimize potential damage before fire suppression release.

"When combined with VESDA and fire suppression system elements, Li-ion Tamer provides the tools and the interface we need to protect BESS essentially anywhere they are installed. Li-ion Tamer is a flexible, effective option that can take the place of traditional gas detection," says Snow, adding that many BESS units will be retrofitted with this technology over the course of the next year for data centers in Virginia, Florida, Texas, and Oregon.

According to Pope, the importance of Li-ion-specific early warning detection systems will only increase, given the rapid growth of Li-ion BESS beyond data centers. Today, BESS systems are being installed by utilities, renewable energy producers, and those in the industrial, retail, defense, healthcare, and transportation sectors.

"We expect thousands of these pods to be manufactured in the next couple of years," says Pope. "It is all about effectively increasing the level of protection and decreasing the level of risk. It just makes sense for end users to protect their BESS investment."

For more information, contact Dawn Wotapka, Director of External Communications at Honeywell, 715 Peachtree Street, N.E., Atlanta, GA 30308; email: dawn.wotapka@honeywell.com.

www.honeywell.com •

ESSEX STRUCTURAL STEEL CO., INC.

Pre-Engineered Buildings Built to Withstand The Rugged Northeast Winters

- Commercial, Industrial and Agricultural Buildings Built to Satisfy Your Building Needs
- Pre-Engineered Steel Packages
- Pre-Engineered Post Frame Packages
- Mini Storage Buildings

Call For a Quote On Your Next Project

We Manufacture 26 & 29 ga. Steel Roofing & Siding

STRUCTURAL STEEL CO., INC.

607 Rt. 13 S, Cortland, NY 13045

National: 1-800-323-7739

(607) 753-9384 • Fax: (607) 753-6272 • www.essexsteel.com

LATEST TECHNOLOGY AND INNOVATION KEEPING AHEAD IN CABLE TRAY SYSTEMS

Who Is Zip Cable Tray Systems Inc.?

Zip Cable Tray Systems Inc. was designed in 1994 at the specific request of the telecom industry for a lightweight cable tray system that was strong, yet fast and easy to install.

Recently rebranded as Zip Cable Tray Systems Inc., the new name better reflects our superior product design and service that our company has offered for over 2 decades.

Our mission here at Zip Cable Tray Systems Inc. is to continue providing our clients with the market-leading cable tray products and excellent customer service that our company has become known for.

Made in Canada! Located in Pointe-Claire (Montreal), Quebec, Canada, our modern production facility is equipped to meet any special requirement you may have.

Zip leads the industry when it comes to cable tray systems and wire management!

Behind every meticulously handcrafted Zip cable tray and cable ladder are highly skilled employees who work in a state-of-the-art facility located less than an hour from the Canadian - U.S. border and 20 kilometers from downtown Montreal.

A Canadian Company Leading The Industry in Aluminum Cable Tray Systems & Wire Management.

Our complete line of accessories connects to all Zip cable tray siderails using the spring nut system.

Zip Cable Tray Benefits

Fast Installation:
One of the prime features of the Zip cable tray design is that the channel-style siderails accept spring nuts. This eliminates the need for any drilling and makes for an extremely fast and simple installation.

Fast Delivery:
90% of our orders ship in less than a week, a market leader! A large inventory of popular items (ladder-style cable racking) are in stock for immediate delivery.

All-Aluminum Construction:

- Lightweight
  - 1 person can easily install
  - Less weight for the whole site
- Easy to cut and easy to drill (if necessary)
- Connections do not require jumper cables across them
- Non-magnetic properties reduce induction and electrical losses to a minimum
- Very attractive looking
- No painting required
- Never any rust or corrosion problems

Aluminum cable tray systems are clearly superior in construction and appearance to electrical raceway systems made from other metals. Zip has taken that benefit and incorporated the best product design to fully utilize the advantages of aluminium.

Wire Management at its Best with Zip

There is always a Zip cable tray and wire management solution to fit your needs.

Whether you are doing telecom work or high voltage electrical wiring, routing 1 cable or 1000's of cables, multiple levels, branching off in many different directions, Zip cable trays and cable racks will get the job done right!

We cater to many industries that all have special requirements.

Our priority is to find a cable raceway solution for your specific situation. Whether it is the low profile cable tray (BT Series) or 6" high siderail with a sweeping 36" radius, we have a solution for your project!

Zip's ladder-style cable tray is lightweight, durable

"When Disasters Strike, First Responders Rely On Us!"

Our complete control, communication and convenience Utility Truck Console is becoming the new standard for truck fleets of all sizes. Loaded with standard and optional features that maximize ergonomics, productivity, and fleet/telecom standards into a one exceptional Mobile Console Solution.

MOBILE DESK
MOBILE OFFICE SOLUTIONS
1-877-663-3375
www.mobiledesk.com

and simple to install. With Zip cable tray and cable racking your wire management is in good hands.

UL Classified / CSA Approved
Zip cable tray is classified by UL and CSA/NEMA tested and approved for use in Canada and USA and complies with the electrical codes of both countries (CEC and NEC).

Powder coating with any colour is available, but note that adding a painted coating to the cable tray negates the UL and
CSA/NEMA certification! Jumper cables will need to be installed across cable tray splices to maintain electrical continuity.

Electrical Continuity
Zip's cable tray systems couplings do not require additional equipment grounding conductor's (EGC), also known as 'jumper cables', across splices. This is a significant cost saving. In accordance with the harmonised CSA/NEMA cable tray standard, a strict electrical continuity test was performed on all Zip cable trays. This test measures the electrical resistance across a splice and the result must be less than 0.00033 ohms!

All Zip cable trays easily passed the electrical continuity test.

Some clients create their own, much stricter standards. For example, in order to qualify for the Motorola R56 standard, jumper cable across each splice is a necessity.

Zip has Succeeded in Satisfying Many Industries:
- National cell phone network providers (eg: Bell, Telus, Rogers, Videotron, AT&T, Verizon Wireless, Sprint, US Cellular and T-Mobile)
- National railway company signal houses (eg: Amtrak, CN, CSX)
- Cable TV network providers (eg: CBC, RDS, Cogeco, Videotron)
- Cabling contractors
- Electrical contractors for various commercial and industrial projects, eg:
  - Factories and industrial shops
  - Solar panel installations
  - Oil fields installations
  - LAN rooms
  - Data centres
  - POP (point of presence) substations
  - Schools and universities
  - Hospitals
  - Car wash installations
  - High voltage installations/Utility

www.ziptray.ca •

Payroll People meet at a Tradeshow

Our payroll takes 2 minutes to prepare and keeps us compliant with the DAVIS BACON ACT

Our payroll takes many hours and 3 people to put together

We get an 80% savings in time and money with compliant client - compared to manually prepared payroll

I USE COMPLIANT CLIENT BY EMARS

WE MANUALLY PREPARE PAYROLL

Compliant client sounds great. My friend's construction company was heavily fined being out of compliant. He might go to jail!

Our payroll is certified, worry Free and very inexpensive plus it is DOL APPROVED

- Encrypted
- Free Demo
- Works with Excel
- 55,000 + Client
- Web Based
- Paperless
- Works with Time Clock

Compliant client by eMars

emarsinc.com

480-595-0466

Ad Index

Company	Pg.	Website
Base Tek	2	www.basetek.com
Contractor Lighting	9	www.conctractorlighting.com
Cool Shirt	17	www.coolshirt.com
CopperWeld	IBC	www.copperweld.com
Critter Guard	8	www.critterguard.org
EDE Electric Motor Testing	12	www.edeinst.com
Emars Inc	27	www.emarsinc.com
Emsco	5	www.emscomn.com
Essex Steel	23	www.essexsteel.com
Evluma	11	www.evluma.com
Gen-y Hitch	19	www.genyhitch.com
Grace Industries	1	www.graceconnectedsafety.com
Intermatic	7	www.intermatic.com/panelguard
Krenz Vent	12	www.krenzvent.com
LAN Shack	14	www.lanshack.com
LS Cables	26	www.lscusa.com
Max USA	22	www.maxusacorp.com
Mobile Desk	15, 25	www.mobiledesk.com
Rhino Switchboard Mat	IFC	www.rhinoswitchboardmat.com
Ronk Electrical	13	www.ronkelectrical.com
Skyhook Mfr	21	www.skyhookmfr.com
Voltec	10	www.voltecpowerlighting.com
Winola	BC	www.winolaindustrial.com
Working Concepts	28	www.safeworker.com
Zip Tray	3	www.ziptray.ca

Upgrade Your Building Wire with Copper-Clad Aluminum (CCA).

Cost Stable

Reduce your exposure to volatile price fluctuations.

Code Compliant

NEC referenced since 1971, Copperweld is accepted by builders and inspectors.

Easy to Install

A **similar metal to copper** for electrical connections, CCA is light and easy to bend.

COPPERWELD®
BUILDING WIRE

Learn More

Copper where it counts™

Contact us for sales and info:
615-622-4662
buildingwire@copperweld.com
copperweld.com

THE SAFEST WAY
TO CLIMB A STEEL POLE
IS WITH WINOLA INDUSTRIAL INC.

WINOLA
INDUSTRIAL INC
CLIMBING DEVICE DIVISION
570-378-3808
FAX: 570-378-2597
RR1 BOX 1070, FACTORYVILLE, PA 18419
WWW.WINOLAINDUSTRIAL.COM
WINOLA@EPIX.NET

Galvanized
Weathering Steel
Powder Coated

Basic Device
for Working
(steps adjacent)

Basic Climbing
Device
(steps staggered
for climbing)

NEW!
Safety
Tie-offs

Overhead View
Step Bolts
Not Aligned

Knurled, Impact
Tested Rungs

Ladder Pegs
Pegs are Aligned
for Easier Climbing

Visit us at: www.winolaindustrial.com

OVER 4 MILLION LADDERS PRODUCED SINCE 1971