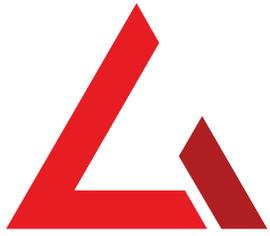


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## Enhancing current maintenance practices

Most companies currently use infrared thermography to inspect their electrical systems. Infrared is a proven technology for detecting elevated temperatures within operating electrical distribution systems. Typically performed on an annual basis, infrared inspections can detect evidence of overheating caused by loose/deteriorated connections, overloaded circuits and imbalanced loads. While infrared inspections can be valuable in helping to prevent unexpected failures, they only provide a single 'snapshot' leaving the subject components unmonitored for the balance of the year.

Advances in wireless technology have resulted in sensors that allow systems to monitor for the same types of defects that are detectable by thermal imaging. When permanently installed on electrical enclosures, these sensors can provide year-round monitoring of critical electrical system components and can immediately alert personnel when problems arise. The use of a Delta T Alert™ monitoring system provides constant monitoring of your critical systems electrical enclosures to complement and enhance the safety and effectiveness of any electrical maintenance program.



Hartford Steam Boiler- Electrical system malfunctions are the leading cause of fire in commercial buildings – Annual Cost to Industry – over \$30 billion. More than 30% of these malfunctions are caused by loose and dirty connections.

# Managing the Risk

The heartbeat of any commercial organization is its electrical distribution system, which regulates production equipment, lighting, communications, climate control, water pressure, etc. Without electrical power all your services stop – along with your business.

Electrical distribution systems are often overlooked because most of the facility's electrical enclosures are inaccessible, since many electrical enclosures cannot and should not be opened in an energized state. According to Harford Steam Boiler Inspection and Insurance Company (HSB), electrical system malfunctions are the leading cause of commercial building fires. These fires have increased in frequency over the past two decades, due to increased demand on overloaded electrical systems. HSB reports that 75% of all electrical failures are due to human error or carelessness, deficient or delayed maintenance, unqualified personnel, and/or budget cuts.







6H  
277/480 VOLT 3 PHASE  
FED FROM GMDP  
BKR 38, 40, 42  
3 PHASES A BROWN, B ORANGE, C YELLOW

A tablet displaying a data table with multiple columns and rows. The table has a header row with blue background. The data rows have alternating light and dark grey backgrounds. The columns include various numerical and text data points.

Item	Qty	Unit	Material	Location	Alt/Rev	Order Qty	Order Date	Order Status
277/480 VOLT 3 PHASE	1	Panel	6H	FED FROM GMDP				
BKR 38, 40, 42	1	Panel						
3 PHASES A BROWN, B ORANGE, C YELLOW	1	Panel						

# Constant monitoring of electrical enclosures

For a majority of commercial office buildings, an annual infrared testing program is the sole measure of electrical system reliability. Infrared testing does a great job of detecting overheating anomalies caused by conditions such as loose connection, overhead circuits and unbalanced loads. The thermographer or electrician conducting the infrared testing can identify visual deficiencies, such as discolored components, wiring issues and mismatched fuses, within the electrical enclosures.

Delta T Alert™ wireless systems constantly monitor every critical electrical enclosure in a facility and complements existing electrical maintenance programs. The system also offers energy savings by allowing for the timely repair of loose connections that create increased resistance, thus resulting in higher energy costs. The cost of cleaning and replacing electrical components is low compared to energy savings realized through this form of preventative maintenance.



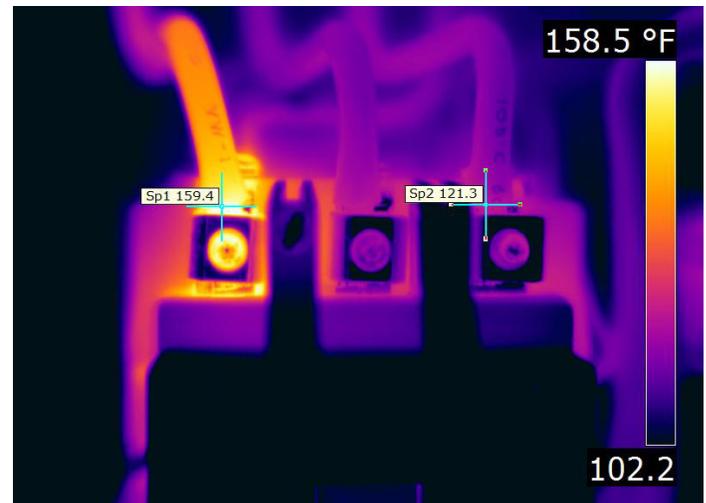
You can effectively reduce your risk of an unscheduled outage by as much as 66% with an effective preventive maintenance program in place.



CNA Insurance - A reasonable "average" electrical fire loss today is estimated to be \$750,000.00.

## Delta T Alert™ A Simple Device with Staggering Results

Delta T Alert™ is a wireless, self-contained temperature-monitoring sensor that attaches to an electrical enclosure cover. The patented, Delta T Alert™ unit is simple to install and comprises of two temperature sensors – one to monitor the electrical enclosure's interior temperatures and the second to monitor the room's ambient temperature where the enclosure is located. Delta T Alert™ sensors are then configured to collect data on a daily basis, at specific time intervals. The data is wirelessly transmitted for analysis and trending and warns the operator of temperature rises within their electrical enclosures – well before more serious problems arise and provides an easier, more effective way to prevent costly electrical damage and system downtime.





## An Easy Way to Reduce Risks

Delta T Alert™ bridges the gap between your infrared scans by monitoring and reporting critical temperatures within your electrical enclosures on a daily basis and effectively tracks your electrical system enclosure temperatures and sends data for analysis and trending. If a critical issue arises, immediate notification allows for an appropriate corrective action, before costly damage occurs.

The system warnings that Delta T Alert™ provides allow for maintenance technicians to be warned of potential issues causing the elevated internal ambient temperatures. This information and trend data gives maintenance personnel an enormous safety advantage prior to any type of routine maintenance or troubleshooting of possible electrical anomalies within the electrical enclosures.





IEEE – Disconnect Switches have the highest % rate of failure without preventive maintenance.

## IRISS Infrared Windows and Delta T temperature monitoring systems

IRISS IR Windows can also be equipped with Delta T Alert™ systems. When the temperature differences are above a pre-determined level or significantly different from other electrical enclosures within the system the Delta T Alert™ will remotely alarm the support engineers, repair teams, etc... with details and the location of the temperature alarm.

The maintenance engineers can then go to the identified enclosure and inspect the internal energized and loaded components inside of the electrical enclosure through the IRISS infrared window in complete safety. The infrared scan will allow the engineer to ascertain the exact temperature of the fault and if required conduct the repair once the system is made safe. Once the repair is completed the system can be reenergized and a follow up inspection completed to ensure that everything is correct and then the electrical enclosure can be benchmarked and system reset with new baseline temperature delta.

Delta T Alert™ systems are not just for electrical distribution systems, transformers and switchgear, they are also used in a vast variety of motors, isophase and bus bar systems, mechanical systems, control systems and cabinets.



SAXART®



# IRISS Believes Working SMART is Not Hard!

The Safety and Maintenance Academy of Reliability Technologies™ (SMART) offers several unique training and certification classes that provide you and your company the knowledge and practical experience necessary to complete your electrical inspections safely and efficiently.

Designed by electricians, for electricians, these hands-on training courses are unlike any other available to date. They not only outline current industry standards and best practices, but also show you how to implement them.

IRISS training classes and products are designed on practical, real-world experience that has been hone with input from our clients, staff and countless hours of designing successful electrical maintenance programs for companies around the globe.

## About IRISS SMART Training

### Energized Electrical Maintenance Course with Level I or Level II Certification

Learn to safely perform energized electrical inspections with confidence by combining infrared, ultrasonic, and power quality testing technologies to give you the full picture of your assets

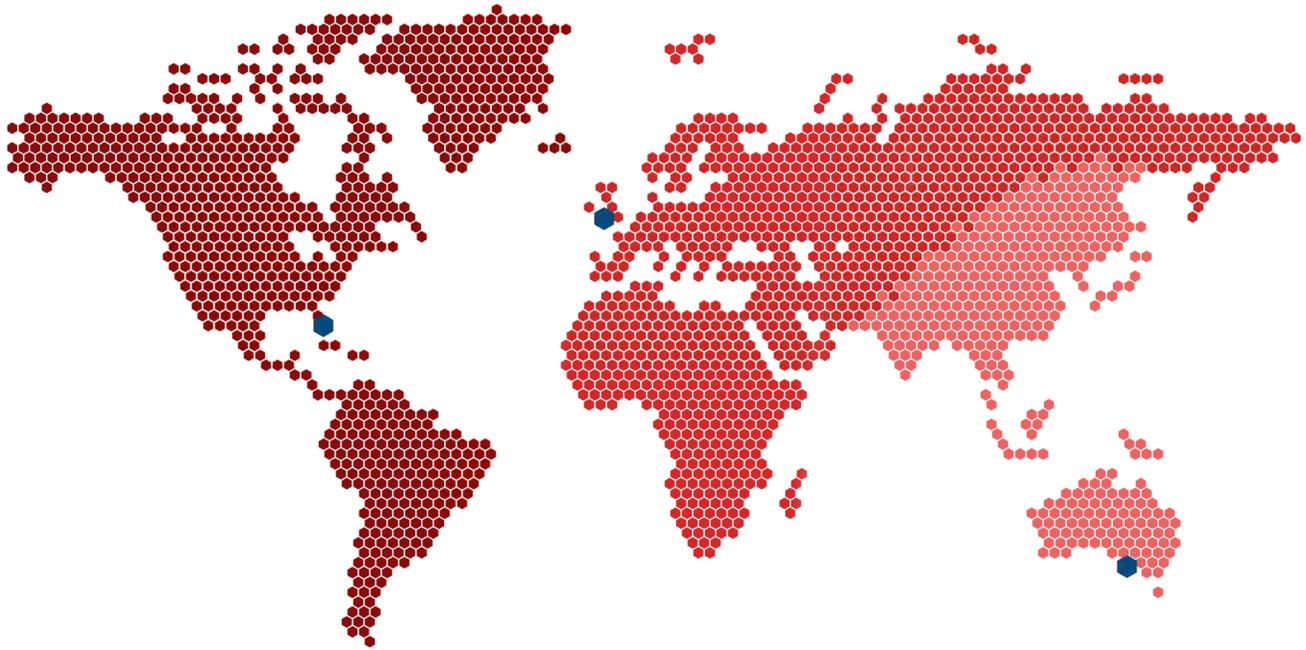
### IRISS Certified Installer Course

Become the preferred IRISS certified installer in your region. Grow your client base and revenue. As an IRISS certified installer, customers will turn to you to for the right infrared window in the right place.

### Customized On-Site Training

With our traveling labs, all SMART training can be done on-site and customized to meet your specific needs.

Our state-of-the-art training center in Bradenton, FL is set up with labs so students can safely learn in a hands-on, experience-driven course.



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