

Risk Control Bulletin

Infrared Testing Reveals Hidden Defects

RISK CONTROL



The electrical system in a plant or business is often taken for granted. While it is among the most reliable systems, it does require periodic maintenance and inspection to continue to supply power in a safe and efficient manner. Over time, connections can loosen, resulting in a non-continuous path for the electricity to follow and eventual arcing and potential breakdown and fire.

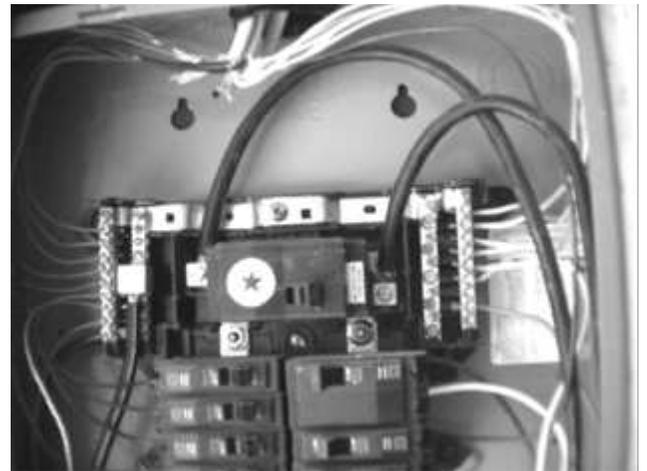
This process causes heat to be given off. Thermography can detect this heat or energy that is emitted from equipment.

What is Thermography?

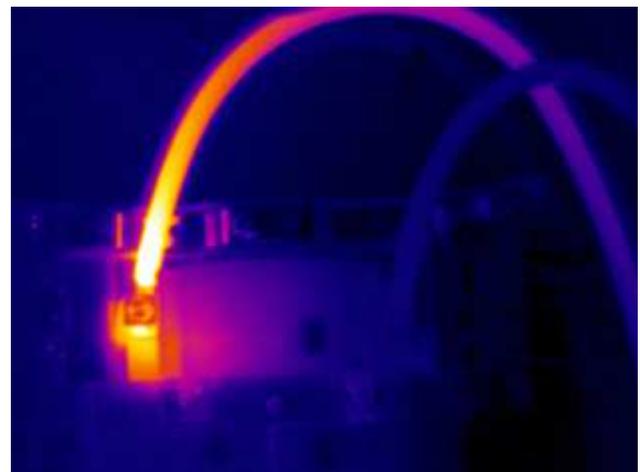
Thermography is the use of an infrared imaging and measurement camera to "see" and "measure" thermal energy emitted from an object.

Thermal, or infrared energy, is light that is not visible because its wavelength is too long to be detected by the human eye; it's the part of the electromagnetic spectrum that we perceive as heat. Unlike visible light, in the infrared world, everything with a temperature above absolute zero emits heat. Even very cold objects, like ice cubes, emit infrared. The higher the object's temperature, the greater the IR radiation emitted. Infrared allows us to see what our eyes cannot.

Infrared thermography cameras produce images of invisible infrared or "heat" radiation and provide *precise non-contact temperature measurement* capabilities. Nearly everything gets hot before it fails, making infrared cameras extremely cost-effective, valuable diagnostic tools in many diverse applications. And as industry strives to improve manufacturing efficiencies, manage energy, improve product quality, and enhance worker safety, new applications for infrared cameras continually emerge.



This image shows a typical breaker box. Nothing appears to be wrong when observed with the naked eye.



Here is a Thermal scan of the same breaker box. Note the abnormal heat level on the left.



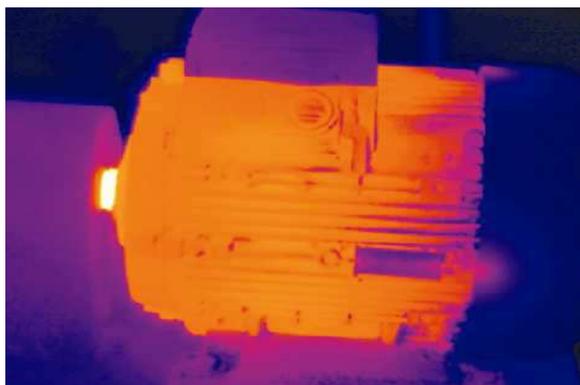
The benefits of an Infrared survey:

- Help prevent emergency, unscheduled maintenance
- Fewer interruptions to production – Greater uptime
- More efficient energy usage
- Reduction in potential damage to equipment and the facility from fire

Infrared testing of electrical equipment is the best way to detect overloads, poor connections, faulty contacts, and other deficiencies – any of which could cause a fire. It is rare that an Infrared survey doesn't find "hot spots" in an electrical system.



What appears to be fine on the outside...



Can be an accident waiting to happen on the inside

In addition to the wide variety of risk control services available from CNA, an opportunity may exist for an on-site Infrared thermographic survey for your facility. A CNA risk control representative can work with you to see if this type of analysis is available to you.

Additionally, CNA has a business alliance with FLIR Systems, a global leader in Infrared technology, to bring CNA policyholders a discount on qualified FLIR equipment and training. You can then implement your own infrared electrical preventive maintenance program, customized for your facility.

To learn more about FLIR, their products and services and how an infrared program can benefit you, contact FLIR systems at 1-800-464-6372 or visit www.flirthermography.com