



Throughout the evolution of infrared technology for predictive maintenance applications, electrical system inspections remain the cornerstone of the industry. The demand for infrared inspections of electrical systems remains high. Accurate diagnosis begins with understanding electricity and what causes thermal anomalies, compromised connections, overload conditions, load imbalances, harmonics problems, and inductive heating. These problems come from a multitude of settings including industrial, manufacturing, utility, and commercial sites.



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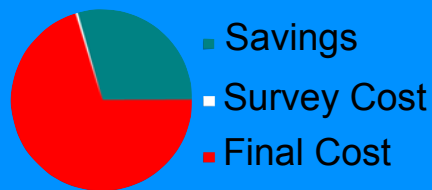
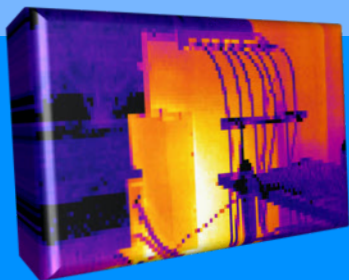
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# elecscan

ELECTRICAL SYSTEM FAULT SURVEYS

## The Role of an Ammeter and Temperature Comparison

An infrared camera can decipher thermal patterns associated with circuit load however; it is not capable to determine the amount of load on a circuit. An ammeter provides this information to the thermographer and allows the comparison of temperatures of different components under similar / identical loads. For example, 10 amps of current flowing through a #12 wire on one circuit should be the same temperature as 10 amps of current flowing through a #12 wire on an adjacent circuit assuming they are operating in the same ambient temperature. If there is a deviation from this, it may suggest an abnormal condition that requires further investigation.

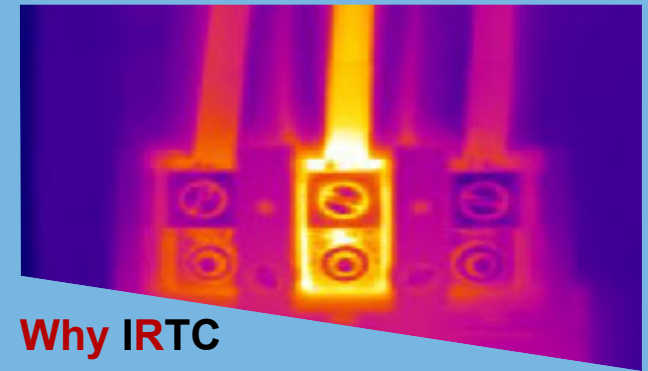


## Electricity, Current, and Heat

Electricity is energy made available by the flow of electric charge through a conductor. Common voltage classes found in commercial, industrial and manufacturing electrical systems include 220/230V and 400V. In most of these settings, the wiring is specified as having three hot legs commonly termed A-, B- and C-phase, and a neutral leg. The flow of current is necessary in an electric system for infrared to be an effective diagnostic tool. Current is measured in amperes and is defined as the movement or flow of electrically charged particles through a conductor, they interact with one another to generate heat that is detectable with an infrared camera. In correctly designed electrical systems, the heat generated by circuit load should fall within published standards for absolute maximum allowable temperature criteria.

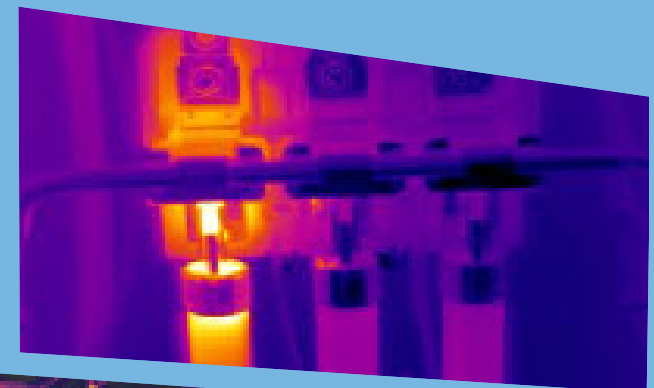
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## Why IRTC

- Save energy and increase efficiency
- Reduce unscheduled downtime
- Increase the effectiveness of your maintenance personnel efforts
- Improves safety in all aspects
- Lowers your emissions
- It is fast and effective
- Saves time and money



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# Non destructive surveys while in full operation