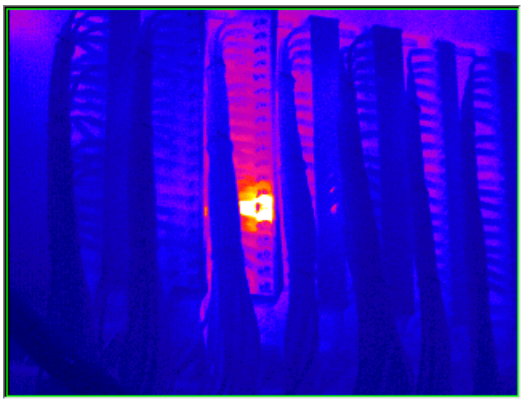
IRTN

Infrared TechNote

Pay attention to control wiring

When we think of infrared inspections, what normally comes to mind first are the high power or high voltage circuits. These are the places where a failure can be the most costly since they have the potential to take out a significant portion of production. However, control wiring should also be inspected. Because of the smaller wire sizes, loose connections on these circuits, even though they carry little current, will also produce measurable heating. Although the failure of these connections will not cause catastrophic electrical damage, then can be a nuisance and impede plant efficiency.



The infrared image on the left shows the terminal blocks for the controls of a machine that uses a vacuum to hold the product down while it is being machined. The hot connection is a sensor that verifies that the required vacuum pressure is present. Several times a day this connection would heat to the point that it would open. The machine would take this as a loss of vacuum and shut down. About a half an hour later the connection would cool and re-make.

The machine operators had no idea they had a hot connection. They believed that the hole in the base plate, where the sensor was located, was clogging up from the machining operation. When the machine would shut down, they would take a vacuum cleaner and clean out the hole. This would take them about a half an hour. Each shift there would be an hour or more of lost production time.

The real problem was found on a routine infrared inspection in which all connections in the facility were inspected. Since tightening this connection, there have been no more machine shut-downs.

ENVISION ENERGY SERVICES

P.O. Box 1351
Danville, KY 40423
859-236-6951