

## Troubleshooting more than 200 motors—and those plating machines



### Testing Functions Case Study

As a successful diversified manufacturer, CompX Waterloo in Ontario, Canada is well aware of the importance of the ongoing maintenance needs for the wide range of equipment within its facility. But troubleshooting was a job that demanded a substantial amount of time and expense. When the company was given a Fluke Thermal Imager as part of an environmental award, it quickly discovered that it could perform troubleshooting duties much more efficiently and effectively, while reducing costs.

#### About CompX Waterloo

In business for more than 50 years, CompX Waterloo is a successful manufacturer of a wide range of products, from precision ball bearing slides to ergonomic products for office environments. Within the 275,000-square-foot facility it has more than 200 motors, along with a full inventory of production equipment, from plastic injection moulding systems to plating machines.

#### A prize catch

Given the quantity of equipment in operation, troubleshooting requirements can be significant. When any issues arose, CompX typically called in outside contractors to handle the job of checking out motors, busbars or electrical panels.

According to David Kroeker, environmental supervisor, "When we had a problem, such as busbars overheating or electrical panel hotspots, we usually

### Application Note

had to call someone in to do the troubleshooting, which meant substantial fees over the year."

As luck would have it, in May 2010 the company won the first annual Energy Excellence Award from the EMC (Excellence in Manufacturing Consortium) for its environmental initiatives. The award came with what has quickly become a highly coveted piece of equipment at CompX—a Fluke TiR Thermal Imager.

The Fluke TiR Series features IR-Fusion® technology that simultaneously captures a digital photo and an infrared image, and then fuses them together to simplify image analysis. This image enhancement helps users to easily identify, locate and repair problems. Images taken can also be viewed and analyzed using the SmartView™ software.

"Until we won this, we never really had the budget to invest in a thermal imager," Kroeker explains. "So everyone was pretty excited about it." In fact when he brought the thermal imager into the workplace for the first time and plugged it in to power the battery, "The electrician was in my office within 10 minutes asking if it was charged. When it was ready, he downloaded all the software to his laptop and inspected a couple of areas of concern."

The electrician wasn't the only person anxious to try it out. Kroeker reports it is also used by maintenance personnel, millwrights and facilities managers to check everything from motors to the building envelope.

**Tools:** TiR Thermal Imager

**Operator:** David Kroeker,  
Environmental Supervisor

**Measurements:** Temperature readings, pinpointing heat loss and ambient air conditions

## All things to all people

As the environmental manager, Kroeker himself often uses the thermal imager to address a wide range of conservation issues, as well as identify areas of improvement. "During a recent cold spell, I was able to use it to look for heat loss throughout the facility. Knowing what I know now with the imager, I've been able to block off openings with insulation to prevent heat loss." He has also used it to check air temperatures in specific areas where ovens and dryers are in use, to measure heat distribution.

The Fluke TiR is also brought out several times every week to check busbar and motor temperatures. "With the thermal imager, it's very easy to tell if the motor was about to go," Kroeker explains. "Being able

to check temperatures saved us a lot of time and expense troubleshooting."

The imager is so popular, some technicians have been known to borrow it to check heat loss and other troubleshooting tasks at home. "One day at lunch, a maintenance guy used it to troubleshoot the rear defrost on his minivan to figure out how to fix it," Kroeker says.

## Making life easier

Although the instrument was new to most of the maintenance crew, Kroeker says he was pleased to find it was simple to learn. "I found it was extremely easy to operate from the first time I used it—just the three buttons on the front. It's like a digital camera. You just point, shoot and upload the images to your computer."

Having a thermal imager in house is also helping CompX save considerable costs on troubleshooting functions. "We've definitely reduced the amount of times we've had to call people in," Kroeker says. "Other than certain electrical panels because of arc flash regulations, everything that we contracted out before, we now take care of ourselves. If a motor causes grief, we pick up the imager and go and use it."

He is now looking forward to the time when the Fluke TiR can be used as part of a preventative maintenance program for the facility's more than 200 motors. "I'd love to have temperature checks on all motors done once a month or so. A program is a long-term goal right now."

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