

Connected technology builds troubleshooting teamwork

Name: Michael Kelly,
Master Electrician

Company: The Electrical
Department Co., Guelph, Ontario,
Canada

Tools: Fluke Connect®

Electrical service contractors work on a range of industrial equipment, including motors, welders, process systems, metal fabricators, and automation controls. That often involves troubleshooting equipment all the way back to the main electrical service, far from the machine where problems are occurring.

“Many of the customers that we work for have millwrights or mechanics on staff but some don’t have their own electricians,” said Michael Kelly, a master electrician and owner of The Electrical Department Co. in Guelph, Ontario. “We meet that need for them.”

One recent call came from a box manufacturer that started seeing malformed cardboard sheets sporadically coming off the production line with a crease. An initial inspection failed to show any malfunctioning machinery so they called Kelly in to help find the problem.

Getting to the root cause of an issue like this can take hours and hours of tedious troubleshooting by an electrician. However, Kelly has found a new way to shorten that process using wireless test tools connected to his smartphone.

Multipoint simultaneous troubleshooting

“We have eight Fluke Connect tools, and we have used them to measure up to seven different readings at the same time, while I troubleshoot or help mechanical workers find their issues,” said Kelly.

“We use Fluke Connect to share the data with the mechanics so they become our partners in troubleshooting.”

This works well because electricians don’t typically know exactly what a gear is supposed to be doing. Sharing the readings with mechanics in real time using Fluke Connect software helps engage them in the troubleshooting process to more quickly determine whether the issue is mechanical or electrical.

Sometimes, what was first thought to be an electrical problem turns out to be bearings or other parts that are wearing out, causing current spikes. “It may look like an electrical problem because the numbers are off, but sometimes we find out that a gear is all chewed up and that’s why you’re having those electrical readings,” Kelly said.

Putting Fluke Connect to work

To leverage the Fluke Connect system, Kelly first connects wireless voltage and/or current modules to various device inputs and outputs. Then he creates an ad hoc team of mechanics and equipment operators in the software, adding their contact information through the app.

Next he finds a safe location where he can monitor equipment on the Fluke Connect app on his smartphone as the production line is put through its paces. Equipment operators push buttons to activate various parts of the line as the ad hoc troubleshooting team checks measurements on



their smartphones, using the ShareLive™ function on the Fluke Connect app. This allows all the team members to see the same set of measurements on their smartphones as they activate and deactivate the machines on the line. They can isolate individual devices and check voltages until they finally narrow down the anomaly.

In the case of the misshapen cardboard, the problem turned out to be a gear assembly putting on abnormal pressure.

“Three or four of us can be working on the same machine looking at the same set of data to troubleshoot at the same time. One person can push the buttons and look at how a machine responds and another can be looking at how the measurements are changing.”

Staying away from danger

Kelly also said he frequently uses the Fluke Connect system for logging, instead of dragging out his larger, more complex energy logging equipment. He just clips on the current or voltage module, closes the panel door, re-energizes and monitors from a safe distance outside the arc flash zone.

Industry safety is a big concern for Kelly and his customers so being able to find equipment issues quickly, away from moving equipment and arc flash danger is a big plus.

“It’s becoming more and more difficult to take measurements at the control panel while the machine is running because we have to suit up,” Kelly said. “But with Fluke Connect we can connect the modules, close the panel, and then walk out of the danger zone and read the results on our smartphones.”

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