

Taking a wireless approach gets to the root of the problem faster

Application Note

Testing Functions Case Study

Field Trial: Fluke CNX™ 3000 Wireless Test Tools

Chipper Stohl of AECl decided to put the new Fluke CNX 3000 Wireless System to the test to see how the new tools measured up to his day-to-day tasks.

Stohl tested the CNX 3000 General Maintenance System kit, which includes the CNX 3000 Wireless Multimeter, the CNX 3000 AC Wireless Voltage Module, and the CNX i3000 iFlex™ AC Wireless Current Module. He added the optional CNX pc3000 PC Adapter so he could monitor multiple parameters simultaneously on a laptop. To see what the wireless components could do, he put them to work in general voltage and current monitoring applications at some of AECl's customer facilities.

In the process he found that the CNX 3000 Wireless System actually expedited resolution of some of his trouble calls. In one such example he responded to a "motor down" call at a manufacturing plant. A 25-horsepower motor starter overload block kept tripping out.

"My first step for that type of call is to do a winding test on the de-energized motor. Measuring the balance of resistance readings gives me a good idea of the health of the motor windings," says Stohl. He used the Fluke CNX 3000 wireless multimeter to run that test and found normal results.

The next step was to monitor the line voltage, load side voltage, and load side current on the starter. He de-energized the panel, following proper arc

flash procedures, and installed the wireless modules. He used the multimeter to monitor line voltage, the voltage module to monitor load side starter voltage, and the CNX i3000 iFlex™ AC Wireless Current Module to monitor load side current on the starter. Then he closed the panel door and moved to the laptop to view all three measurements in one display.

"I monitored the live reading on the laptop of all three modules during the startup inrush, running amps, volts, line, and load," says Stohl. "The panel door was closed so I didn't have to wear the full 'bomb suit,' just the standard PPE [personal protective equipment]."

Stohl monitored the starter for about two minutes and then reviewed the results on the PC. The measurements showed about a 10 volt differential between the load side voltage and the line side voltage, indicating a problem internal to the motor starter. When he opened up the starter he found broken-down contact surfaces, resulting in the voltage differential drop.

Stohl estimates that being able to set up three wireless modules inside the closed panel, and monitor them simultaneously from a safe distance, allowed him to get to the root of the problem faster and with much less PPE time.



Tools: Fluke CNX™ 3000 General Maintenance System kit

Operator: Chipper Stohl, field service technician at Associated General Contractors, Inc. (AECl) of Woodstock, Illinois

Applications: Voltage and current monitoring

Based on his initial experiences with the CNX 3000 system, Stohl is looking forward to applying it to more trouble calls because it:

- Maintains safety and reduces personal protective equipment (PPE) time. "If you ask any electrician who is sweating under PPE, they'll tell you it's not a lot of fun to wear and it's hard to see out of with the tinted helmet shield," says Stohl. "With the CNX 3000 you can connect the modules, close the panel door, remove yourself from the arc flash zone, and remove at least some of your PPE while you view the measurements."
- Provides a complete system. "Ninety-five percent of our work involves voltage, current, continuity, and ohms resistance checking, and you can do all of that with this system and read multiple test points at once, which saves time," says Stohl.
- Simultaneously monitors voltage and current. "If you're looking for a voltage drop you can see what the current is doing to quickly identify that there's something going on here," says Stohl.



After locking out the main power to the motor control, Chipper Stohl connects his CNX i3000 Current Module and a CNX v3000 AC Wireless Voltage Module in the de-energized cabinet.

With the CNX modules safely installed in the motor control cabinet, and the cabinet re-energized, Chipper can now make his measurements safely, by wirelessly connecting to the modules from his laptop. He can leave the modules in the cabinet to log readings over time, returning to remotely connect to the modules without having to re-open the cabinet. He can accomplish this with his laptop or with the main CNX 3000 Wireless Multimeter.



Fluke. *The Most Trusted Tools in the World.*

Fluke Corporation

PO Box 9090, Everett, WA 98206 U.S.A.

Fluke Europe B.V.

PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:

In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa +31 (0) 40 2675 200 or
Fax +31 (0) 40 2675 222
In Canada (800)-36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: <http://www.fluke.com>

©2013 Fluke Corporation.
Specifications subject to change without notice.
Printed in U.S.A. 5/2013 4332293A_EN

Modification of this document is not permitted without written permission from Fluke Corporation.