

What would you use a wireless measurement system for?

Application Note

It would be like having a virtual second or third man on site at all times...

We asked that question—What would you use a wireless measurement system for?—of Bill Wedge, the president of Wedge Electric, Inc., a commercial, industrial, and manufacturing electrical contracting company serving southern California. Here's his response.

To troubleshoot an intermittent motor overload condition—providing the motor isn't faulty—you could connect the wireless voltage module of the Fluke wireless system to the motor starter within the motor control center (MCC), the wireless current module in the field disconnect switch adjacent to the motor, and the temperature module at the motor. You could then verify and view the supply voltage, current, and temperature all on the central multimeter while it was operating. Further evaluation would be required to isolate cause of problem, but one person could narrow the variables down quickly. The modules could be left in place and periodically viewed and logged by one person or multiple personnel within different shifts, and/or modules left in place—auto-logging data—and downloaded later for review.

To commission an air handler unit, you would connect the voltage module to the supply fan over-current protective device, the current module to the supply fan "T" leads at the variable frequency drive (VFD), and secure the temperature module in the discharge air plenum or adjacent to the discharge air sensor. Multiple operation parameters could be simultaneously verified, simplifying calibrating the 0 to 10 V dc analog input signal from the discharge air sensor to the VFD for supply fan speed reference.

And, to troubleshoot a sporadic extruder barrel heater zone where multiple control enclosures are located on different floors of a three-level platform, you would connect the voltage module to the silicon controlled rectifier (SCR) for the suspect zone, the current module to the heater load conductors, and the temperature module to the barrel zone heater. Since measurements could be obtained at any level of the platform, one person, instead of two or three, could collect them.

The personal protective equipment (PPE) required by modern **safety** standards, while important, inherently adds risk through loss of dexterity and color



impairment from the yellow shield, which requires a flashlight to distinguish between blue and green "conductors." And while power should always be de-energized with lock-out/tag-out provisions, it's not always permissible. The Fluke wireless system modules could be connected to potentially dangerous voltage, safely guarded behind closed panel doors, and easily monitored wirelessly with vastly reduced exposure to hazardous conditions. This is a win-win!

Basic voltage, current, and temperature wireless modules cover many testing and troubleshooting scenarios, and **imagine the possibilities** of additional modules such as thermal imaging, video, or programmable camera to capture potential future electrical

failures and hazards. The Fluke wireless system would enable one person to perform multiple tasks safely with modules placed in separate enclosures and readings obtained anywhere in the general vicinity. It's like having a virtual second or third man on site at all times.

The Fluke CNX 3000 wireless system consists of one central meter that receives wireless voltage, amperage, and temperature readings from multiple sister meters placed in a variety of locations up to 20 meters away.



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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>

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