FLUKE®

“Million dollar tool” surprises electricians

Application Note

Testing Functions
Case Study

Tools: Fluke T+PRO Electrical Tester

Operator: Electrical contractor Matt Hilgeford, facilities manager Robert Drysdale, entertainment industry lighting and electrical contractor Roger Lattin

Measurements: Voltage from 10 V to 600 V, continuity, resistance, GFI trip, phase rotation

When Fluke surveyed commercial electricians on the Fluke T+PRO Electrical Tester, here’s what they said.

From jalopy to Cadillac...

Electrical contractor Matt Hilgeford of Richmond, Virginia has just one problem with his Fluke T+PRO Electrical Tester. He can’t put it down.

“I’ve had guys tell me they were going to take it from me,” he said. “If I were to set it down, it would disappear.”

Hilgeford owns Virginia Electric Co. He and his crew work mainly in large commercial buildings, with some smaller commercial and high-end residential in the mix.

As Hilgeford sees it, a basic electrical tester like this is an essential tool for any electrician. It tests for the presence of voltage, checks continuity, and measures resistance.

“If you know how to use it, it’s a good tool for diagnostics,” he said. “You can tell if you have a break in your phase wire, your neutral wire, or your ground wire. You don’t have to say ‘Well, I’m not getting power so the wires are no good.’ You can pin it down to what wire, so when you go to replace a wire in a commercial building raceway, you only have to pull one wire.” With a choice of three alarm modes—flashing light, sound and vibration—Hilgeford prefers the flash and sound.

“Let’s say I go to an apartment building and they’ll have something wrong with a generator. The first thing I do is pull the T+PRO out and check to see if the circuit’s live. They’ll usually be running 480 V or 600 V. I’ll start from there. I can always check to see if I’ve got continuity in the wire or if the wire’s burned out.

In addition to his good safety practices, Hilgeford now also gets the reassurance of using a tool rated to CAT IV 600 V. Solenoid testers aren’t safety rated at all. And the T+PRO has a special circuit for transient protection.

“I used to use an ordinary solenoid tester,” Hilgeford said, “but there’s things the T+PRO can do that that unit cannot do.” The T+PRO has a GFCI test function, ohm meter, flashlight, and a phase rotation indicator that Hilgeford wasn’t expecting in an inexpensive tester. “Let’s say I go to an emergency backup motor,” he added. “This T+PRO will tell you the reverse and forward motion of the motor. No other meter, hand held like this, has that extra feature. You’ve got to buy a special meter to do that.”

“This is like a Cadillac, compared to that junk I was using. It’s so up to date, it’s like day and night,” Hilgeford said. That old solenoid tester is gone from his tool belt.

‘Limitless amounts of Cat V’

Working out of Crestview, Florida, Robert Drysdale uses his T+PRO in his role as regional facilities manager handling electrical installations in seven buildings covering 350,000 square feet in the Southeast.

“The T+PRO seems to cover most of the stuff I do on a regular basis, and it’s lighter and less bulky than my multimeter,” he said. “I like the built-in light, and I use the resistance function quite a bit. I run limitless amounts of Cat V and Cat VI for alarm systems, and of course inevitably you get a wire pinched or broken. I’ve never had a meter with a GFI circuit trip built in and I’ve used that a few times. It’s been really handy,” Drysdale said. “If circuits are added on in bathrooms or kitchens in the break rooms, I have to check the ground fault, whether the entire circuit is ground fault from the breaker or whether it came off a GFI outlet.”

In addition, the T+PRO’s small size makes it easier to use when installing alarm sensors in HVAC ducts. “Doing a lot of fire alarm work, it’s always great to have instruments that meet the latest recommendations of the NFPA, and this one does.”

‘That’s the way I was trained’

Roger Lattin works TV sets in Hollywood, moving from set to set to make sure complex electrical and lighting systems operate safely and correctly. It’s a business where a delay on a complex stunt shot could cost $50,000 a minute. Lattin liked the fact that the T+PRO starts out in the continuity setting. “That’s the way I was trained to use a meter,” he said. “You always check the probes with continuity or on the Ohms setting. Then you go in and measure your voltages. That way you know the test leads are OK to test with.”

The T+PRO’s intuitive operation was also appealing. “Being a typical American male, I didn’t even read the instructions,” he joked. “I opened the package and it went to work.”

“We’re never in the same spot twice,” Lattin said. “When we pull into a new location, the rigging crew’s been in beforehand and laid out cables, the generators hook up, and we start working. The first thing you do is pull out your meter and start checking the system. The T+PRO works real great for checking all the common voltages that we use, everything from 120/208 to 277/480 Delta. We also use low voltage stuff. The thing I like about it is it’s ac/dc. For the run of the mill stuff, I don’t break out my bigger Fluke.”

Depending on the application, technicians use the LED voltage light indicators, the vibration feature, or the LCD voltage readout.

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