Vendors support hipot, insulation-resistance and ground-bond tests

by Rick Nelson Jul 25, 2018

To meet the requirements of your electrical safety testing applications, you can choose from a variety of instruments and systems that perform hipot, insulation-resistance (IR), ground-resistance and ground-bond (GB) tests across a range of industries. Vendors offer a variety of options — from software that automates instrument control and records test results to a variety of test probes and leads. Relevant standards range from IEC 60601-11 for medical device testing to IEEE Std 43-20132 for testing the insulation resistance of electrical machinery.

From milliohms to megohms

Figure 1. Vitrek V74 hipot safety tester

Vitrek addresses product safety in a variety of application areas. Its products can test medical equipment, consumer appliances, communication equipment and lighting while also finding use in industrial, aerospace and automotive applications, according to Kevin Clark, president. “Vitrek offers two series of electrical safety testers — 95x and V7x (figure 1) — that each perform hipot tests as well as insulation resistance (megohms), ground-resistance (milliohms) and ground-bond tests,” he said. “The product line also includes the 964i high-voltage switching system for multiconductor applications” (Figure 2).

To help customers meet relevant standards, Clark said, “For new customers, we will work with them to identify th right model since we offer products with a range of options. For both new and existing customers, we offer guidance configuring the test parameters to meet the applicable standards’ test requirements.”

Vitrek also offers options, including software. “Our automated testing software facilitates the saving of time and money by increasing test throughput combined with built-in data gathering and reporting typically required by the National Recognized Testing Lab (NRTL) to confirm compliance with the applicable standard,”

Clark said. (NRTLs include private-sector organizations recognized by the Department of Labor's Occupational Safety and Health Administration to perform certification for certain products to ensure that they meet the requirements of both the construction and general-industry OSHA electrical standards.) Clark added, "And as mentioned before, the 964i is a useful accessory when performing multichannel hipot and ground-bond tests."

Figure 2. Vitrek 964i high-voltage scanning system

As for keeping operators safe, Clark said, "Our hipot testers include built-in high-side sensing that will automatically shut the unit down if the output current limit is exceeded." In addition, he added, "We offer a high-voltage warning light to alert passersby that testing is in progress."

When asked about unique product features, Clark said, "The V7X Series is our most popular line of hipot testers. It's compact, lightweight and convection-cooled (no fans) to reduce noise. It features the industry's only color touchscreen, providing intuitive setup and operation." He added, "The 95X Series is a higher-end line featuring up to 30-kV output voltage and high-resolution, low-current measurement down to 1 pA."

Clark continued, "Vitrek products are all designed and manufactured in the U.S. Vitrek electrical safety analyzers have a wide range of output voltages and power levels available — with AC hipot up to 30 kV and 500 VA and ground-bond up to 40A. Vitrek offers DC hipot sourcing up to 50 mA to excel at charging and testing highly capacitive loads such as solar panels and filter banks."

To request information on Vitrek Hipot Testers or other Vitrek Electrical Test & Safety Equipment visit www.Vitrek.com/EE8.asp.