For electrical testing in high-hazard environments, new Fluke test tools give technicians more ways to work safely

Sydney, February 10, 2011 – Technicians working on hazardous equipment and high-voltage circuits deserve every advantage to complete their electrical test and measurement jobs safely. Fluke has introduced new test tools—a new family of Fluke clamp meters and a new four-channel hand-held oscilloscope—engineered to give electricians and maintenance technicians new ways to work safely and reduce their exposure to electrical shock.Industrial and commercial electricians often work in 415 volt electrical environments that pack enormous transient surge potential—and pose a significant threat of arc flash and shock. The new Fluke test tools meet, and exceed, tough international standards for safe use in such environments. And some go even farther, by enabling technicians who must test live circuits to do their jobs at a distance from electrically hazardous installations.The new Fluke 381, 376, 375 and 374 current clamps and iFlex™ current probes are rated for use in measurement category IV environments (CAT IV 600V, CAT III 1000 V) as defined by safety standards in the US, Canada and Europe. The detachable display of the new Fluke 381 Clamp Meter enables technicians to see measurements remotely—up to 10 metres away from the equipment they are testing. They can even see readings when the test circuit is enclosed in an equipment cabinet. The new Fluke ScopeMeter 190 Series II handheld portable oscilloscopes are the first four-channel scopes designed for harsh industrial environments. Not only are they rated as dust and drip-proof, but they are also the first hand held oscilloscopes safety rated for CAT III 1000 V / CAT IV 600 V environments. What safety ratings meanFor electrical workplace safety in Australia and New Zealand, the safe design of electrical installations and testing requires compliance with local standard AS/NZ 3000. Although this standard does not incorporate the International Electrotechnical Commission (IEC) standards for the safety requirements for electrical equipment for measurement (defined in section IEC 61010), it is the care of duty of the electrical works supervisor to ensure the safety requirements for electrical equipment used on the site for electrical measurement meets the IEC 61010 standards.The preferred way to work on hazardous electrical circuits is with the power off. Equipment that could be turned on must be locked out and tagged. But some tests, such as the current tests that clamp meters perform, simply aren’t possible unless circuits are live. As the electrical work environment becomes more hazardous, the need for arc flash, electrical transient and electrical shock protection increases. In Australia and New Zealand there is currently no arc safety standard and the two major world standards (American- National Fire Protection Agency and European- IEC) are the most common being adopted here. For situations when a location-specific arc flash hazard analysis is not available, NFPA 70E defines the arc flash protection boundary for equipment with voltage levels between 50V and 600V at four feet. (See NFPA 70E section 130.3 (A) (1) for full details.) The standard names a wide variety of electrical maintenance tasks and assigns each a hazard/risk category of 0 to 4. The standard also details the kind of personal protective equipment (PPE) that must be worn when working in the various hazard/risk categories. The NFPA standard categorises test equipment as PPE and requires that test equipment be rated and designed for the circuits and environments where it will be used. To clarify what this means, the 2009 Edition of NFPA 70E cites American National Standards Institute (ANSI)/ISA- 61010-1 (82.02.01)/UL 61010-1, the standard first established as International Electrotechnical Commission (IEC) 61010.These measurement categories (CAT) listed in the standards cover systems of 1000Vs or less, including 415V and 600V, three-phase circuits. They define the danger of transient voltage spikes and electrical arc flash and differentiate the severity by location, voltage level and potential for harm. ANSI, the Canadian Standards Association (CSA) and IEC define four measurement categories:* CAT IV - applicable to test and measuring circuits connected at the source of the building’s low-voltage MAINS installation* CAT III - applicable to test and measuring circuits connected to the distribution part of the building’s low-voltage MAINS installation* CAT II - applicable to test and measuring circuits connected directly to utilisation points (power points and similar points) of the low-voltage MAINS installation* CAT I - defines non-CAT rated products that are not intended to be directly connected to the MAINS supply.Some installed equipment may include multiple categories. A motor drive panel, for example, may be CAT III on the 415V power side, and CAT I on the control side.A higher CAT number refers to an electrical environment with higher power available and the potential for higher-energy transients. A test tool designed to a CAT III standard can resist higher energy transients than one designed to CAT II standards. Within a category, a higher voltage rating denotes a higher transient withstand rating. For instance a CAT III-1000V test tool has superior protection compared to a CAT III-600V rated tool.A new family of safety-rated test toolsAll members of the new Fluke clamp meter family have a CAT IV rating. They are designed to provide flexibility, performance and safety in the most challenging industrial conditions. The four-channel Fluke ScopeMeter 190 Series II portable oscilloscope is also designed to tough it out on the shop floor, while providing CAT IV-600V protection. -ENDS-For more informationFluke is focused on incorporating safety into test tool design. The company also offers an extensive array of electrical safety education and training materials, available without charge, through the Fluke Electrical Safety Education Program. Visit the Fluke safety training website for more information. Fluke test instruments are distributed in more than 100 countries. For more information on the entire new Fluke clamp line, go to www.fluke.com/ReadyForAnything. For more information on Fluke tools and applications, or to find the location of your nearest distributor, contact Fluke Australia, Locked Box 5004, Baulkham Hills, NSW 2153, call (02) 8850-3333, fax (02) 8850 3300, or e-mail sales@fluke.com.au. Visit Fluke’s website at www.fluke.com.au.Follow Fluke on Facebook, Twitter, YouTube or Linkedin.

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