



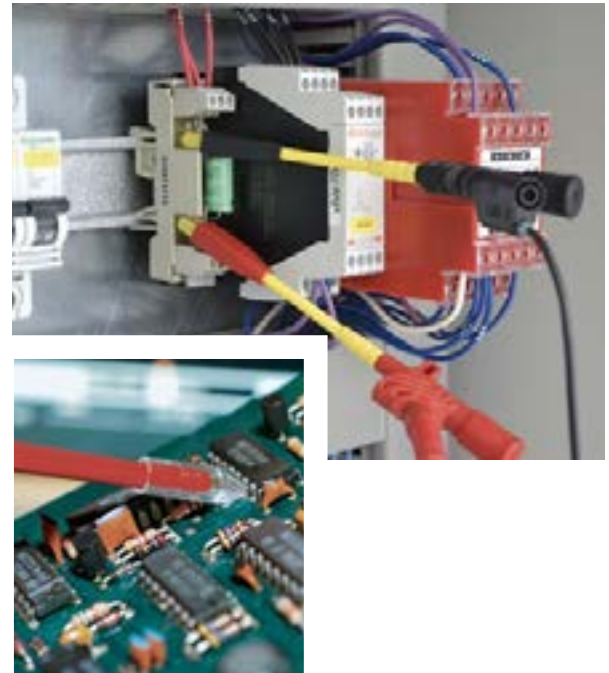
## TOP TIPS SELECTING THE PROPER PROBES, CLIPS, AND LEADS FOR YOUR TEST & MEASUREMENT TOOLS

Whether you're working in a laboratory, a medical facility, or an industrial plant, if you're using test and measurement equipment of any type, you will need a variety of leads, clips, probes, plugs, and sockets. It's important to know which accessory is pertinent for your particular application requirements. These tips will provide a general understanding of the different test and measurement accessories and their most common uses.

1

### **Clamp-type test probes are for hands-free measurements.**

Clamp-type test probes are often used with electronic boards and devices to provide fine connections to wires, pins, and eyelets for simple, rapid measurement of voltages, small currents, and frequencies. These easy-to-operate ergonomic designs provide claw-type clamps in small and large sizes that permit the measuring point to be accessed and gripped without slipping. Clamp-type test probes are available for special solutions where users need to get into difficult-to-access places. Once applied, users can focus their attention on the test equipment being used instead of concentrating on holding to the test point.



2

**Alligator clips work well with machine-mounted accessories.**

The large jaws of an alligator clip firmly bite into the test specimen, making them perfectly suitable for machine-mounted accessories in laboratories and for final inspections in industrial manufacturing. Alligator clips, similar to clamp-type test probes, allow users to free their hands for other activities. These clips primarily come into play when measuring current. Engineers have employed alligator clips as low-voltage jumper leads as well as multimeter leads. These spring-loaded clips are very versatile.



3

**Sharp-tipped, slim test probes facilitate high-density printed-circuit board testing.**

The right probe for getting at small contact points on high-density printed-circuit boards is through the use of a slim, sharp probe tip. These tips can be used whether you need to penetrate oxidation layers or wish to establish contact with sensitive components or robust test specimens. In particular, the slim structure makes the testing of wiring systems easy. Probes can be sharpened if they become dulled and are available in a variety of sizes.

4

**Oscilloscope probes become part of the circuit under test.**

Knowing how an oscilloscope probe works is critical to getting accurate measurements. They are used to perform complete signal and circuit analysis. Basically, an oscilloscope probe connects the device under test to the oscilloscope and acts as a transmission line, passing your signal from the source to the oscilloscope. When this is done, the oscilloscope probe becomes part of the circuit, which means that the signal on the screen is the measured signal plus the effect of the probe.

Oscilloscope probes incorporate an attenuation circuit to counteract or limit this interference in order to provide a more accurate measurement. Modular construction of oscilloscope probe systems—using a range of accessories—enables a flexibility that can adapt to your specific requirements.

5

**Measuring leads offer strength and flexibility as conductors.**

Conductors are used to handle the most robust and heavy loads for testing media or for machine-mounted accessories in all IEC 61010 measuring categories. They are strong, long-lasting components used repeatedly in a variety of applications. Standard measuring leads must be made from high-quality materials and manufactured for long life under harsh conditions. Regardless of how you are using these leads, it is wise to keep them in stock and readily available.

6

**Test plugs are used throughout industrial research and development.**

Plugs are a common component found in every engineer's toolbox. Typically, there will be a variety of sizes with different safety features and a large color spectrum. There are multiple contacts and connection systems available for the assembly of measurement leads. Self-assembling plugs are available where no special tools are needed. Plugs for special applications—such as handling high voltages and offering safety and screw connections according to IEC 61010—are also available.

7

**Select test sockets when safe, long-term couplings are required.**

Like plugs, sockets and couplings are used widely to provide safe plug-in connections. These products provide quick and uncomplicated connections of measuring leads and plug-in devices, covers, or panels. They can even be applied for setting up circuits when necessary. Sockets come in a variety of built-in and press-in options with multiple connecting possibilities. Sockets are available insulated or uninsulated and can offer contact protection up to 1,000 Volts in measuring category III according to IEC 61010 standards. Variations of spring-loaded sockets and unspring sockets are also possible and are available in multiple colors.



8

**Complete sets of test and measurement accessories provide wide-ranging solutions.**

Specialists are always looking for the right tool for the job, which is why complete sets can be the right solution. The proper probe, lead, and clamp sets provide a variety of combinations of well-matched accessories for multiple applications. Maintaining your ability to do the best job possible at all times means having what you need at your fingertips—sets are those tools.

