

# Test Equipment Solutions Datasheet

Test Equipment Solutions Ltd specialise in the second user sale, rental and distribution of quality test & measurement (T&M) equipment. We stock all major equipment types such as Spectrum Analyzers, Signal Generators, Oscilloscopes, Power Meters, Network Analyzers etc from all the major suppliers such as Keysight, Tektronix, Anritsu and Rohde & Schwarz.

We are focused at the professional end of the marketplace, primarily working with customers for whom high performance, quality and service are key, whilst realising the cost savings that second user equipment offers. We fully test & refurbish equipment in our in-house, traceable Lab. Items are supplied with manuals, accessories and typically a full no-quibble 1 year warranty. Our staff have extensive backgrounds in T&M which enables us to deliver industry-leading service and support. We endeavour to be customer focused in every way right down to the detail, such as offering free delivery on sales, presenting flexible technical + commercial solutions and supplying a loan unit during warranty repair, if available.

As well as the headline benefit of cost saving, second user offers shorter lead times, higher reliability and multivendor solutions. Rental, of course, is ideal for shorter term needs and offers fast delivery, flexibility, try-before-you-buy, zero capital expenditure, lower risk and off balance sheet accounting. Both second user and rental improve the key business measure of Return On Capital Employed.

We are based in at Oakley, Bedfordshire in the UK from where we supply test equipment worldwide. Our facility incorporates Sales, Support, Admin, Logistics and our own in-house Lab.

All products supplied by Test Equipment Solutions include:

- No-quibble parts & labour warranty (we provide transport for UK mainland addresses).
- Free loan equipment during warranty repair, if available.
- Full electrical, mechanical and safety refurbishment in our 40GHz in-house Lab.
- Certificate of Conformance (calibration available on request).
- Manuals and accessories required for normal operation.
- Free insured delivery to your UK mainland address (sales).
- Support from our team of seasoned Test & Measurement engineers.
- ISO9001 quality assurance.

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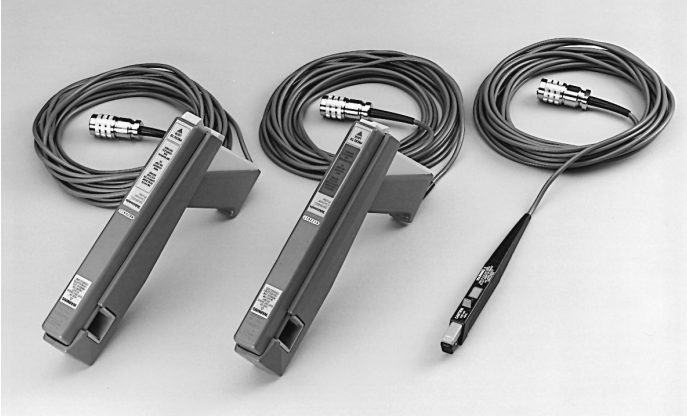
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# Probes for Current Measurement Systems

A6312 • A6302 • A6302XL • A6303 • A6303XL • A6304XL • CT4 Data Sheet



A6303XL, A6304XL, and A6302XL. The Eight-meter XL Series Current Probes.

## Features & Benefits

### A6312

- 2 Meter Cable
- 20 Amps Continuous / 50 Amps Peak
- DC to 100 MHz
- Up to 0.15 in. Conductor Diameter

### A6302

- 2 Meter Cable
- 20 Amps Continuous / 50 Amps Peak
- DC to 50 MHz
- Up to 0.15 in. Conductor Diameter

### A6302XL

- 8 Meter Cable
- 20 Amps Continuous / 50 Amps Peak
- DC to 17 MHz

### A6303

- 2 Meter Cable
- 100 Amps Continuous / 500 Amps Peak
- DC to 15 MHz
- Up to 0.83 in. Conductor Diameter

### A6303XL

- 8 Meter Cable
- 100 Amps Continuous / 500 Amps Peak
- DC to 10 MHz

### A6304XL

- 8 Meter Cable
- 500 Amps Continuous / 700 Amps Peak
- DC to 2 MHz

### CT4

- Pulsed Currents to 20,000 A
- Continuous Currents up to 2,000 A<sub>p-p</sub>
- Accepts 1.5 in. Diameter Conductors
- Measurements on Bare Conductors to 3,000 V<sub>pk</sub> (1,000 V<sub>RMS</sub> CAT III)
- AC
- Split Core
- Use with A6312, A6302, A6302XL, P6021, or TCP202

## Applications

- Motor Drives
- Satellite Systems
- Inverters
- Transportation Systems
- Power Supplies
- Avionics



AM503 Current Measurement Family

## AM503 Family Current Probes - A6312, A6302, A6302XL, A6303, A6303XL, A604XL, CT4

A total of six current probes are available for use with the AM503B and AM5030 Current Probe Amplifiers. Since all six probes are of the split-core mechanical design, they easily clip on and off of a conductor. All the probes provide simultaneous DC and AC current measurements with a wide range of current amplitude and bandwidth capabilities.

The AM503 Current Probes convert the DC and AC flux field of a conductor to a voltage signal which is sent to an AM503B or AM5030 Amplifier. The probes include both a Hall Effect device, which senses the DC current, and a ferrite transformer which senses the AC current. The probes also utilize a bucking current from the Amplifier, which eliminates core saturation. The bucking current is 20 A for the A6302XL, 100 A for the A6303XL, and 500 A for the A6304XL.

### A6312, A6302, and A6303 Current Probes

The A6312, A6302, and A6303 offer a wide range of current measurement capability for the lab and bench environment. The A6312 covers frequencies from DC to 100 MHz while the A6302 covers DC to 50 MHz. Both clip onto conductors up to 3.81 mm (0.15 in.) and measure continuous currents up to 20 A and peak currents up to 50 A as long as they do not exceed the amp\*second product of 100 A\* $\mu$ s.

The larger A6303 measures higher amplitude, lower frequency currents. It clips onto conductors up to 21.1 mm (0.83 in.) in diameter. Its frequency range is DC to 15 MHz. It will measure continuous currents up to 100 A and peak currents up to 500 A, as long as the amp\*second product of 10,000 A\* $\mu$ s is not exceeded.

The A6302 and A6303 are also compatible with the 11A16 2-CH Current Probe Amplifier for the 11000 and DSA Series oscilloscopes. With the 11A16, the A6302 is rated for 10.5 A, and the A6303 for 52.5 A.

**Note:** The A6312, A6302XL, A6303XL, and the A6304XL are not compatible with the 11A16.

### XL Series Current Probes

The three XL current probes add both convenience and expanded current measurement capability. The XL probes are designed to operate with the AM503B and AM5030 Current Probe Amplifiers. They are incompatible with the older AM503 and AM503A amplifiers. The XL (for extra long) probes have eight-meter cables, which allow you to reach test points on large devices such as heavy duty motors or automobiles. In addition, connecting to test points on transportation platforms such as trains, ships, or aircraft is much easier with the XL probes.

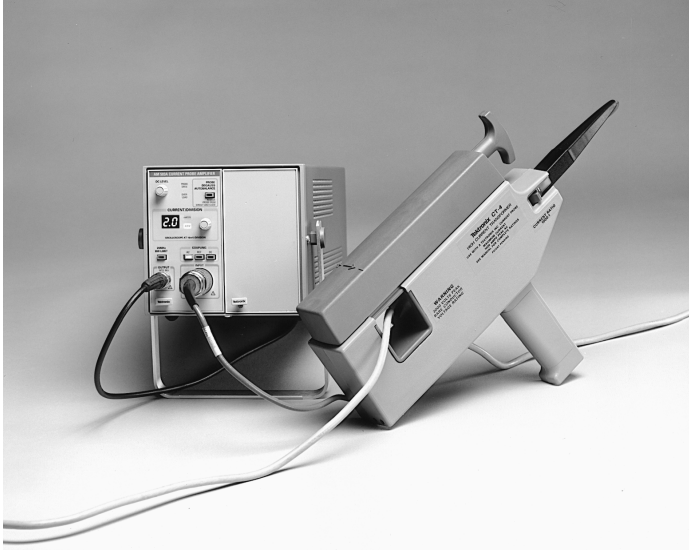
The A6302XL and A6303XL are modified versions of the A6302 and A6303 probes. The A6302XL can measure 20 A continuous (50 A peak) signals from DC to 17 MHz. The A6303XL can measure 100 A continuous (500 A peak) signals from DC to 10 MHz.

The A6304XL is rated for 500 A continuous (700 A peak) and is the same size as the A6303XL. The A6304XL has a bandwidth of DC to 2 MHz and is especially well suited for measurements on high-performance inverters, motor drives, and other high-current switch-mode control devices. The eight-meter cable makes it very easy to access test points on devices physically separated from your measurement instrument.

### Safety

AM503S/AM5030S – Certified to base standard UL3111-1, CSA1010.1, EN61010-1, IEC61010-1.

A6302/6312/6303/6303XL/6304XL – Certified to probe standard UL3111-2-032, CSA1010.2.032, EN61010-2-032, IEC61010-032.



CT4

## CT4 Current Probe

The CT4 is a robust clip-on high-current transformer that extends the measurement capability of the P6021, A6302/XL, A6302, A6312, and TCP202 clip-on current probes. Maximum low-frequency performance down to 0.5 Hz is obtained using the AM 503S. Current amplitudes to 20,000 A may be measured using the A6302/XL, P6021, A6302, A6312, or TCP202 (with passive termination), provided the amp\*second ratings are not exceeded.

The CT4 may be used with the P6021 for measurements at normal line frequency and above. (The P6022 and A6303 are not compatible with the CT4.)

The CT4 has receptacles for current probes in either 20:1 or 1000:1 step-down ratios.

The 1.5 in. square split-core opening makes it possible to clip onto large conductors without breaking the circuit under test. Insulated core and shield assemblies allow measurements on bare wires to 3000 V<sub>P</sub> (1000 V<sub>RMS</sub> CAT III) and to 14 kV with the included high-voltage bushing.

## Ordering Information

### A6312

100 MHz, 2 m, 20 A current probe.

**Includes:** 6 in. (152 mm) ground lead (196-3120-01) and A6312 instruction manual (070-9603-00).

### A6302

50 MHz, 2 m, 20 A Current Probe.

**Includes:** 6 in. (152 mm) ground lead (196-3120-01), A6302 and A6302/XL instruction manual (070-3905-04).

### A6303

15 MHz, 2 m, 100 A current probe.

**Includes:** A6303 and A6303/XL instruction manual (070-3906-04).

**Note:** A6302/A6303 probes must be used with an AM503, AM503A, AM503B or AM5030 current probe amplifier.

### A6302XL

17 MHz, 8 m, 20 A current probe.

**Includes:** Same as A6302 current probe.

### A6303XL

10 MHz, 8 m, 100 A current probe.

**Includes:** Same as A6303 current probe.

### A6304XL

2 MHz, 8 m, 500 A current probe.

**Includes:** A6304XL instructions (070-8939-02).

**Note:** XL probes work only with AM503B or AM5030 current probe amplifiers.

### CT4

Current probe, high current.

**Includes:** Carrying case (202-0318-00); 12 in. wide, 4 ft. long high-voltage bushing (015-0194-00); Instruction manual (070-6478-02).

### Service

**Opt. C3** – Calibration Service 3 Years.

**Opt. C5** – Calibration Service 5 Years.

**Opt. D1** – Calibration Data Report.

**Opt. D3** – Calibration Data Report 3 Years (with Opt. C3).

**Opt. D5** – Calibration Data Report 5 Years (with Opt. C5).

**Opt. R3** – Repair Service 3 Years.

**Opt. R5** – Repair Service 5 Years.

See Customer Support for further information.



Product(s) are manufactured in ISO registered facilities.

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**For Further Information.** Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit [www.tektronix.com](http://www.tektronix.com)



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