

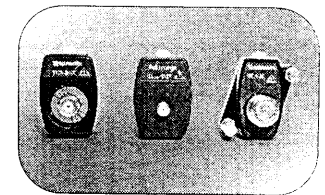
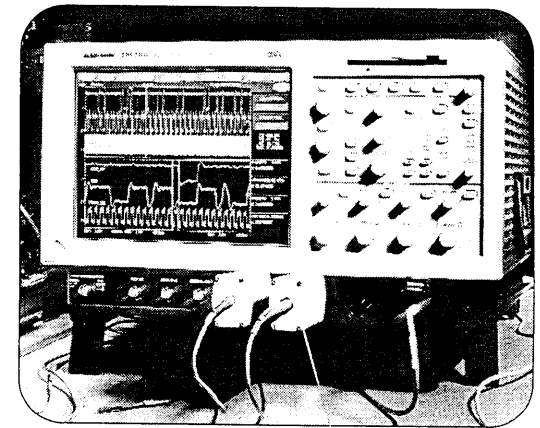
# TekConnect™ Signal Interconnect System for the Future

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To provide the best signal integrity for high-bandwidth oscilloscopes, the new TekConnect™ signal connection system ensures fidelity when probing signal bandwidths above 1 GHz. All future high-bandwidth TDS7000 Series oscilloscopes, and today's TDS7404, feature TekConnect.

This new interface provides a convenient, locking mechanism that makes it easy to preserve a reliable, robust electrical connection. TekConnect ensures signal integrity at speeds beyond the capabilities of the traditional BNC connector, and the P7000 Series probes are directly compatible with the TekConnect signal connection system. Adapters are available to make TekConnect work with SMA-, BNC- and N-type connectors.



► TekConnect Adapters

Adapter Model Number	Connector Style
TCA-BNC	BNC
TCA-SMA	SMA
TCA-N	N

# VocalLink™ Voice Control Software



## Hands Free Control of Your TDS Oscilloscope

Speaker-independent Capability – No Training Required to Recognize Multiple Users

Hear Your Results – Audio Feedback Lets You Keep Your Attention Focused on Your Task, Not on Operating Your Instrument

Comprehensive Command Set – Control Virtually all Major Oscilloscope Functions with Over 60 Simple Voice Commands (VocalLink Basic Supports Over 50 Commands)

Macro Capability – Execute Complex Test Routines with a Single, Simple Command (Pro Version Only)

Supports Multiple Languages – Work in Your Native Language with On-screen Operating Menus and Voice Recognition

## Ensure More Accurate, Consistent and Reliable Measurements

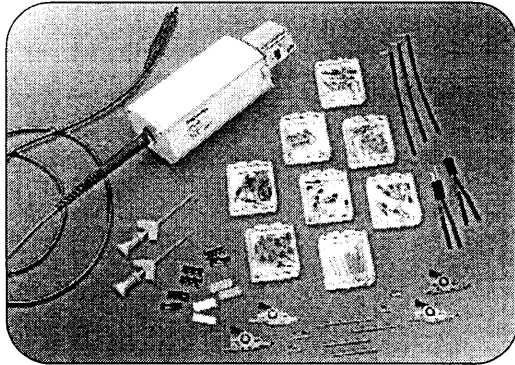
Higher performance demands of today's circuits have created ICs with dense packaging and extremely fine pitch parts. Probing these minute pins requires precise placement and the use of both hands, making it physically challenging to maintain probe contact while operating the oscilloscope. VocalLink software frees your visual attention to focus on making solid probe contact with your test signals to ensure accurate, repeatable measurements.

## Simplify Oscilloscope Use with Macros and Local Language

VocalLink Pro simplifies operation, allowing users to reliably perform complex measurement routines with a single voice command in their native language. Build complex macros – including program branching and results reporting – that are accessed by a single, simple command.

## Two Versions Available

VocalLink™ Basic	Order VCLNKB
VocalLink™ Pro	Order VCLNKP



► P7240 Active Probe.

## Active Probes

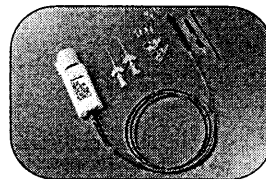
Active FET probes give you excellent results when measuring high-frequency signals from today's complex circuits. DC offset capability allows you to use the probe's full dynamic range when measuring AC signals in the presence of common-mode voltage. TEKPROBE® BNC active probes can also be used with any oscilloscope that has a BNC-type connector, if the 1103 TEKPROBE power supply is used.

### ► Characteristics

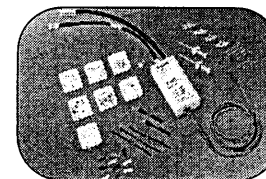
Type	Cable Length	Attenuation	Bandwidth at -3 dB	Linear Dynamic Range	Interface	Scope Compatibility**
P6205	1.5 m	10X	750 MHz	±10 V	TEKPROBE BNC	TDS400-700/3000/7000
P6243	1.3 m	10X	1.0 GHz	±8 V	TEKPROBE BNC	TDS400-700/3000/5000/7000
P6245	1.3 m	10X	1.5 GHz*	±8 V	TEKPROBE BNC	TDS400-700/7000
P6249	1.4 m	5X	4.0 GHz*	±2 V	TEKPROBE BNC	TDS500-700/7000
P6209	1.37 m	5X	4.0 GHz*	±2 V	TEKPROBE SMA	TDS800/8000/CSA8000
P6339A	1.3 m	10X	500 MHz	±300 V <sub>RMS</sub>	TEKPROBE BNC	TDS794D/TDS694C
P7240	1.4 m	5X	4.0 GHz*	±2 V	TekConnect	TDS7404

\* P6245/P6249/P6209 and P7240 is typical.

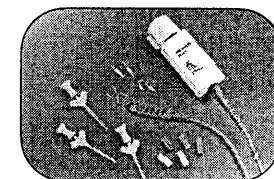
\*\* Probes with bandwidths >1 GHz or attenuation of 5X may not function with "Probe Cal" on older TDS oscilloscopes. Check [www.tektronix.com](http://www.tektronix.com) for more complete information on compatibility.



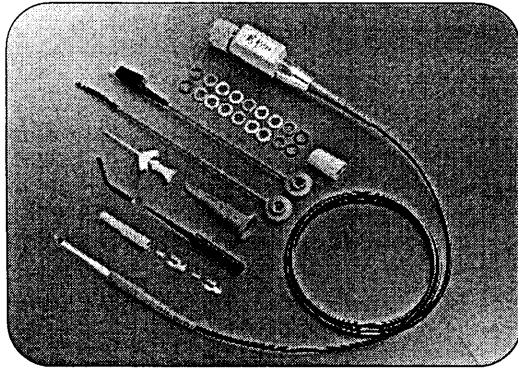
► P6249 Active Probe.



► P6209 Active Probe.



► P6243 Active Probe.



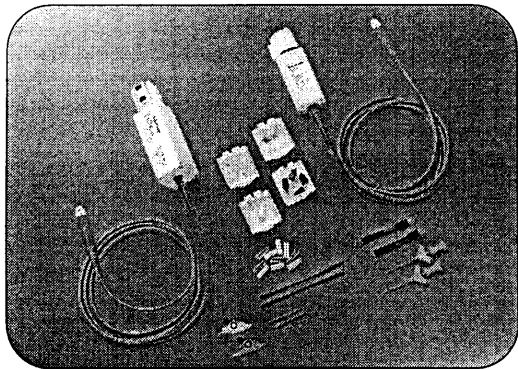
► P6139A Passive Probe.

## Passive Probes

Most general-purpose or laboratory oscilloscopes use passive probes to make a versatile and convenient connection to a device under test. The ideal probe/oscilloscope combination should acquire your signal and display it without altering the signal. While it is not possible to be totally non-invasive to the circuit, matching the probe and oscilloscope to the circuit under test yields excellent results for many applications. Tektronix passive probes are carefully designed to match the input characteristics of the oscilloscopes they complement, preserving maximum signal integrity.

## ► Characteristics

Type	Cable Length	Attenuation	Bandwidth at -3 dB	Compensation Range	Read Out	Scope Compatibility
<b>1X Passive Probe</b>						
P6101B	2 m	1X	15 MHz	NA		All
<b>10X Passive Probes</b>						
P3010	2 m	10X	100 MHz	15 to 30 pF	Yes	TDS3012/3014
P5050	1.3 m	10X	500 MHz	16 to 22 pF	Yes	TDS5000 Series
P6103B	2 m	10X	60 MHz	15 to 35 pF		All
P6105A	2 m	10X	100 MHz	15 to 35 pF	Yes	All
P6106A	2 m	10X	250 MHz	15 to 35 pF	Yes	All
P6109B	2 m	10X	100 MHz	15 to 35 pF	Yes	TDS320/340
P6111B	2 m	10X	200 MHz	15 to 35 pF	Yes	TDS360
P6112	2 m	10X	100 MHz	15 to 35 pF		TDS200 Series
P6114B	2 m	10X	400 MHz	10 to 35 pF	Yes	TDS380
P6117	2 m	10X	200 MHz	15 to 35 pF		THS700 Series
P6131	1.3 m	10X	300 MHz	14 to 18 pF	Yes	2400 Series
P6133	2 m	10x	150 MHz	10 to 25 pF	Yes	2400 Series
P6134C	1.5 m	10X	400 MHz	12 to 18 pF	Yes	11000 Series
P6136	1.3 m	10X	350 MHz	12 to 18 pF	Yes	2400 Series
P6137	1.5 m	10X	400 MHz	12 to 18 pF	Yes	2400 Series
P6138A	1.3 m	10X	400 MHz	12 to 18 pF	Yes	TDS400 Series
P6139A	1.3 m	10X	500 MHz	8 to 12 pF	Yes	TDS3000/500/600/7000 Series
P6150	1.0 m	1/10X	3/9 GHz	50 Ω Inputs		All 50 Ω SMA Inputs (BNC w/ Adapter)
P6158	1.2 m	20X	3 GHz	50 Ω Inputs	Yes	All 50 Ω BNC Inputs (SMA Inputs w/ Adapter)
P6563A	1.3 m	20X	500 MHz	7 to 30 pF	Yes	TDS500/600/700/7000 Series
<b>1X/10X Switchable</b>						
P2100	1.5 m	1X/10X	7/100 MHz	8 to 35 pF		TDS200 Series

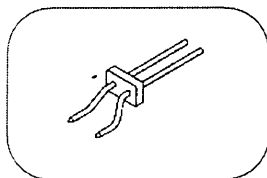


► P7330 and P6330 Differential probes.

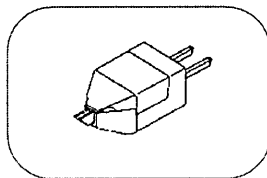
### Differential Probes/ Differential Pre-amplifier

#### The P7330 and P6330 Differential Probes: 3.5 GHz

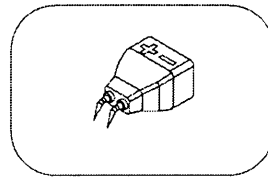
The P7330 and P6330 differential probes provide minimal circuit loading, high-bandwidth connections and differential probing with minimal noise. All of these characteristics help designers meet the challenges posed by today's complex design. In addition, the small probe head, compact design and assorted probe tip accessories allow these probes to easily accommodate manual probing of surface-mount devices.



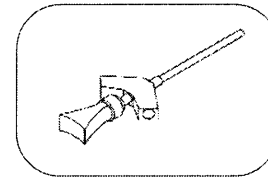
► TwinTip™ Probe Tip Adapter.



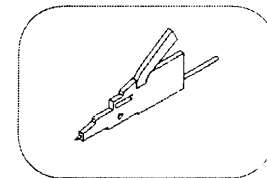
► TwinFoot™ Probe Tip Adapter.



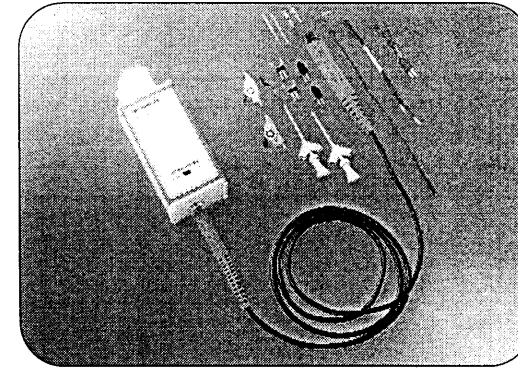
► P6330/P7330 variable spacing adapter.



► SMG50 SMT KlipChip™.



► SMK4 Micro KlipChip™ Adapter.



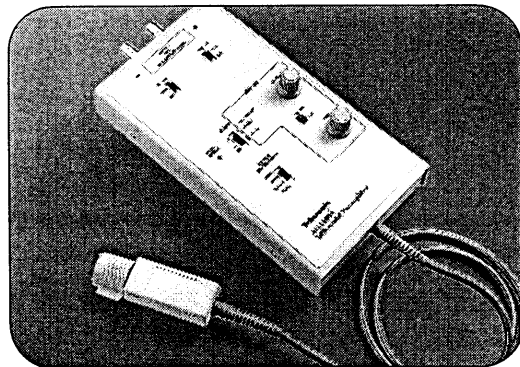
► P6248 Differential probe.

The P7330 and P6330 differential probes enable users to make time domain or frequency domain measurements on high bandwidth signals commonly found in digital IC design (Rambus, DDR, IEEE 1394, USB 2.0 and Serial ATA), communication applications (Gigabit Ethernet and Fibre Channel) and disk drive applications.

The P6248, P6247 and P6246 differential probes make time-domain and frequency-domain measurements in signals commonly found in the disk drive, digital IC design, and communication industries. Low capacitance, a compact probe head, and versatile adapters make these probes excellent for probing surface-mount devices while maintaining high Common Mode Rejection Ratios.

► **Characteristics - Differential Probes**

Model	Bandwidth	Attenuation	Rise Time	Diff. Input V Range	Comm. Input V Range	Input R Range (typical)	Input C Range (typical)	CMRR (typical)	Electrostatic Immunity
P6246	DC to 400 MHz	1X/10X	<875 ps	±0.85 V (=1) ±8.5 V (=10)	±7.0 V (=1) ±7.0 V (=10)	200 kΩ (differential mode)	<1 pF (differential mode)	>30 dB (≤1 GHz) >38 dB (≤100 MHz) >60 dB (≤1 MHz)	>15 kV
P6247	DC to 1 GHz	1X/10X	<350 ps	±0.85 V (=1) ±8.5 V (=10)	±7.0 V (=1) ±7.0 V (=10)	200 kΩ (differential mode)	<1 pF (differential mode)	>30 dB (≤1 GHz) >38 dB (≤100 MHz) >60 dB (≤1 MHz)	>15 kV
P6248	DC to 1.5 GHz	1X/10X	<265 ps	±0.85 V (=1) ±8.5 V (=10)	±7.0 V (=1) ±7.0 V (=10)	200 kΩ (differential mode)	<1 pF (differential mode)	>30 dB (≤1 GHz) >38 dB (≤100 MHz) >60 dB (≤1 MHz)	>15 kV
P7330/P6330	3.5 GHz (typical)	5X	<140 ps	±2 V (typical)	+5 V to -4 V	100 kΩ (differential mode)	<0.5 pF (differential mode)	>60 dB (≤1 MHz) >25 dB (≤1 GHz)	N/A



► ADA400A Pre-amplifier.

**Differential Pre-amplifier**

The ADA400A differential pre-amplifier allows direct oscilloscope measurements of very low-amplitude voltages and signals that are not grounded. Although the ADA400A is designed for TEKPROBE BNC interface oscilloscopes, it can be used with any oscilloscope by using the 1103 TEKPROBE power supply.

► **Characteristics**

**Model** - ADA400A.

**Gain** - X100, X10, X1, X0.1.

**Bandwidth** - DC to 1 MHz.

**Bandwidth Filters** - 100 Hz, 3 kHz, 100 kHz.

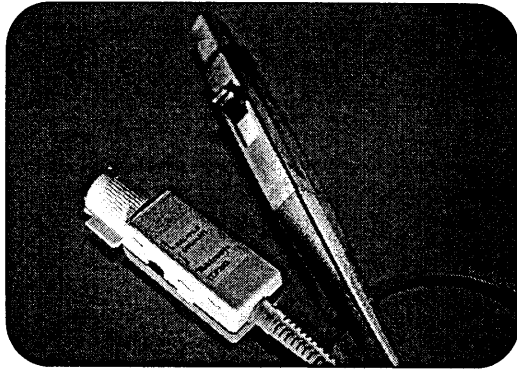
**Differential Voltage** - 100 mV @ X100,  
1 V @ X10, 10 V @ X1, 80 V @ X0.1.

**Max. Input Voltage to Ground** -  
±10 V @ X100, X10; ±40 V @ X1, X0.1.

**Input R** - Input impedance of 1 MΩ in all settings and selectable impedance of infinite Ω (>10<sup>12</sup> Ω) in X100 and X10 gain settings.

**Input Current** - ≈55 pF (each input).

**Common Mode Rejection Ratio** -  
>100,000:1 DC to 10 kHz.



► TCP202 Current Probe.

## Current Probes

### AC/DC Current Probe for Tektronix TDS Oscilloscopes

The TCP202 current probe is a general-purpose, split-core, AC/DC current probe designed for direct connection to a TEKPROBE BNC oscilloscope interface.

### Simple, Instantaneous Power Measurements

By using a P5205 or P5210 differential probe and TCP202 current probe with the appropriate TDS oscilloscopes, users can easily measure instantaneous power, and calculate and display energy on the screen. The propagation delays of the probes are matched so that the current and voltage waveforms are aligned with each other in the time domain. The oscilloscope's deskew capability of the oscilloscope provides additional accuracy.

### High-performance Current Probes

#### AC/DC Current Probes for Any Oscilloscope

The AM503 package system, with AM503B amplifier, a power supply and a split-core current probe, gives you the most accurate AC and DC current measurements from DC to 100 MHz. Hall-effect device circuitry, combined with Tektronix circuit technology, ensures the superior performance you expect from a Tektronix current probe. GPIB programmability may be obtained with the AM5030S system. The specifications below indicate the performance of the complete current and probe subsystem with various probe options.

### In-circuit Current Probes

The CT6 current probe has an extremely small form factor to provide access to today's read/write pre-amplifiers. The CT1 and CT2 current probes are designed for permanent, or semi-permanent, installation in the circuit. All of these solid-core current transformers have a small hole through which a current-carrying conductor is passed during circuit assembly. The current probes CT1 and CT2 include a modular, 42-inch (107 cm) P6041 probe cable.

### AC Current Probes for Any Oscilloscope

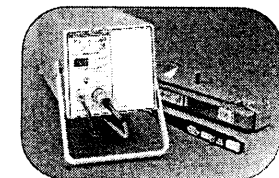
The split-core P6021 and P6022 current probes provide versatile AC current measurements over a wide range of frequencies. These probes are for use with 1 megaohm systems.

### General Purpose Current Probes

The A621 and A622 current probes work with your DMM, TekMeter® or oscilloscope.



► CT6 in-circuit current probe



► AM503S with A6302 and A6303 probes

► **Characteristics - Current Probes**

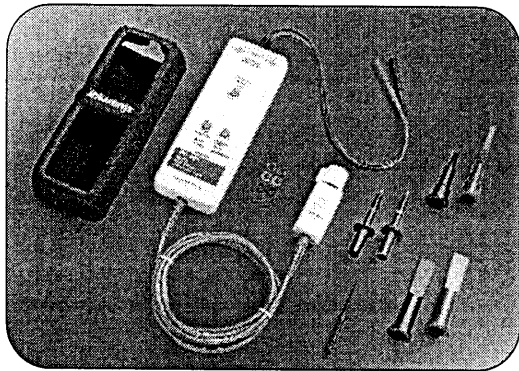
	Cable Length	Bandwidth Hz to MHz	PeakPulse	Max AC p-p	Derate Above	Max DC	Current/Div Display Range	Rise Time	Insertion Impedance @ 1 MHz	Max Barewire Voltage	Max Conductor Diameter
A6312	2 m	DC to 100	50 A	40 A	20 kHz	20 A	1 mA to 5 A**	≤3.5 ns	0.1 Ω	300 V	0.15 in./3.81 mm
A6312 w/CT4	2 m	0.5 to 20	20 kA**	2 kA**3	1.2 kHz	20 A	20 mA to 5 kA**	≤17.5 ns	30 mΩ	3 kV	1.5 in./38.1 mm
A6302	2 m	DC to 50	50 A	40 A	20 kHz	20 A	1 mA to 5 A**	≤7.0 ns	0.1 Ω	300 V	0.15 in./3.81 mm
A6302 w/CT4	2 m	0.5 to 20	20 kA**	2 kA**3	1.2 kHz	20 A	20 mA to 5 kA**	≤17.5 ns	30 mΩ	3 kV	1.5 in./38.1 mm
A6302XL	8 m	DC to 17	50 A	40 A	20 kHz	20 A	1 mA to 5 A**	≤20 ns	0.1 Ω	300 V	0.15 in./3.81 mm
A6302XL w/CT4	2 m	0.5 to 13	20 kA**	2 kA**3	1.2 kHz	20 A	20 mA to 5 kA**	≤20 ns	30 mΩ	3 kV	1.5 in./38.1 mm
A6303	2 m	DC to 15	500 A	200 A	20 kHz	100 A	5 mA to 50 A**	≤23 ns	0.02 Ω	700 V	0.83 in./21.1 mm
A6303XL	8 m	DC to 10	500 A	200 A	1.8 kHz	100 A	5 mA to 50 A**	≤35 ns	0.02 Ω	700 V	0.83 in./21.1 mm
A6304XL	8 m	DC to 2	700 A	700 A	1.8 kHz	500 A	500 mA to 200 A**	≤175 ns	0.2 Ω	700 V	0.83 in./21.1 mm
P6021	1.5 m/2.75 m**5	120 to 60	250 A	15 A	0.5 MHz	0.5 A	20 mA or 100 mA**1	≤5.8 ns	0.03 Ω	600 V	0.15 in./3.81 mm
P6021 w/CT4	1.5 m/2.75 m**5	120 to 20	20 kA**2	2 kA**3	1.2 MHz	20 A	400 mA or 100 A**1	≤17.5 ns	0.03 Ω	3 kV	1.5 in./38.1 mm
P6022	2.75 m	935 to 120	100 A	6 A	10 MHz	0.2 A	1 mA or 10 mA**1	≤2.9 ns	0.03 Ω	600 V	0.10 in./2.54 mm
CT1	1.07 m	25 K to 1000	12 A	1.4 A		0.3 A	2 mA**1 (5 mV/mA)	≤0.35 ns	1 Ω	175 V <sub>RMS</sub>	0.070 in./1.78 mm
CT2	1.07 m	1.2 K to 200	36 A	7 A		0.3 A	10 mA**1 (1 mV/mA)	≤0.5 ns	0.1 Ω	175 V <sub>RMS</sub>	0.052 in./1.32 mm
CT6	1 m	250 K to 2000	6 A	7 A		0.2 A	2 mA (5 mV/mA)	<200 ps	1.1 Ω	30 V <sub>RMS</sub>	0.032 in./.813 mm
TEKPROBE® (TDS400/500/600/700, TDS3000, TDS7000 and 11000 Series)											
TCP202	2.2 m	DC to 50	50 A	40 A	20 kHz	15 A	**	≤7.0 ns	0.07 Ω	300 V	0.15 in./3.81 mm
TCP202 w/CT4	2.2 m	0.5 to 20	20 kA**2	2 kA**3	1.2 kHz	15 A	**	≤17.5 ns	30 mΩ	3 kV	1.5 in./38.1 mm

\*\* Scope set at 10 mV/Div. \*\*2 Based on voltage breakdown. \*\*3 Based on thermal heating limits in CT4. \*\*4 Depends on instrument used. \*\*5 Opt. 03 is 2.75 meters long.

► **A600 Series Current Probes**

Model Number	Frequency Range	Current Range Peak	Instrument Compatibility	Max. Conductor Diameter (mm/inch)	Termination
A621	5 Hz to 50 kHz	100 mA to 2,000 A	Scope/DMM/TekMeter	54 / 2.1	BNC (w/banana adapter)
A622	DC to 100 kHz	50 mA to 100 A	Scope/DMM/TekMeter	11.8 / 0.46	BNC (w/banana adapter)





► P5210 High-voltage Differential Probe.

## High-voltage Differential Probes

### Solve Your Floating Voltage Measurement Problems

The P5200, P5205 and P5210 are high-voltage differential probes that eliminate the need to operate your oscilloscope without proper ground connection, ensuring safe operation. The P5200 probe is designed for use with an oscilloscope from any manufacturer, while the P5205 and P5210 probes are specific to Tektronix oscilloscopes that have a TEKPROBE BNC interface.

## High-voltage Probes

The P5100 and P6015A single-ended probes let users make ground-referenced, high-voltage measurements accurately and safely.

### ► Characteristics - High-voltage Differential Probes

Model	Switchable Attenuation	Differential Voltage RMS/CAT II	Common Voltage RMS/CAT II	DC Gain Accuracy	Bandwidth	Power Source
P5200	500X/50X	1300 V	1000 V	3%	DC to 25 MHz	AC
<del>P5205</del>	500X/50X	1300 V	1000 V	3%	DC to 100 MHz	TEKPROBE
<del>P5210</del>	1000X/100X	4400 V	2200 V	3%	DC to 50 MHz	TEKPROBE

### ► Characteristics - High-voltage Probes

Model	Attenuation	Bandwidth	Loading (M $\Omega$ /pF)	Maximum Input Voltage	Length (Standard)	Compensation Range	Readout
P6015A	1000X	75 MHz	100/3.0	20 kV <sub>RMS</sub>	10 ft/3 m*	7–49 pF	Optional
P5100	100X	250 MHz**	10/2.7	2.5 kV pk CAT I	10 ft/3 m	7–30 pF	Yes

\* 25 ft./7.6 m option.

\*\* Typical.