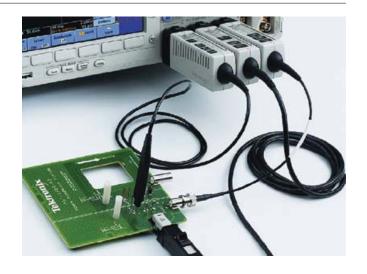# PERFECT VISION BEGINS AT THE PROBE TIP

Tektronix probes ensure the highest signal fidelity possible when connecting a device to an oscilloscope. With over 100 probe choices available, all perfectly matched to our scopes, you can find the right probe for your customers' applications.

THREE STEPS TO CHOOSING THE RIGHT PROBE

1 Determine the type of probe required.

The first step to choosing the right probe is to consider the signals your customer will measure. There are different types of probes for different applications.

PASSIVE PROBES	LOW–CAPACITANCE, PASSIVE PROBES	ACTIVE PROBES	DIFFERENTIAL PROBES	CURRENT PROBES	HIGH–VOLTAGE PROBES
Passive probes are used for general measurements. They are often included with the oscilloscope, and are frequently ordered as replacements. Tektronix passive probes are engineered for maximum performance and perfectly matched to Tektronix scopes.	This class of probes is unique to the Tektronix MSO/DPO5000B, MSO/DPO4000B, MDO4000B, and MDO3000 Series oscilloscopes. Provided free-of-charge with the scope, the TPP Series of probes offers industry-best 3.9pF capacitive loading for wide bandwidth applications.	Active probes are important for measuring high-frequency signals, especially over 500 MHz.	Differential probes are used to measure the voltage difference between two signals, and are used in high-frequency digital communications and sensitive analog circuits.	Current probes help determine how much current a circuit is using. There are AC-only and AC/DC probes. They measure by clamping around a current carrying conductor.	High-voltage probe systems allow oscilloscopes to measure voltages higher than with standard probes – hundreds or even thousands of volts. Differential high-voltage probes are used for taking "floating" or ungrounded measurements on power systems like motor drives, lighting ballasts, and uninterruptible power supplies.

❷ Identify the probe interface on your customers' scope.

Tektronix oscilloscopes are equipped with different oscilloscope-to-probe interfaces, depending on the performance level of the scope. These interfaces range from a standard BNC connector for our basic oscilloscopes to smart interfaces like TekVPI™ and TekPROBE™. Use the table below to find the probe interface of your customer's scope.

OSCILLOSCOPE SERIES	MAXIMUM BANDWIDTH	PROBING INTERFACE
TBS1000	100 MHz	BNC
TDS1000B	100 MHz	BNC
TDS2000	200 MHz	BNC
THS3000	200 MHz	BNC
TPS2000B	200 MHz	BNC
TDS3000C	500 MHz	TekProbe
MSO/DPO2000B	200 MHz	TekVPI
MDO3000	500 MHz	TekVPI
MSO/DPO4000B	1 GHz	TekVPI
MDO4000	1 GHz	TekVPI
MSO/DPO5000B	2 GHz	TekVPI

TIP

If your customer chooses a probe with a different interface type than the mating oscilloscope, then most likely an adapter will be required. In addition, a probe power supply may be required for active, differential, current or high-voltage probes. To determine if an adapter or power supply is required for a particular probe and oscilloscope combination, use the Interactive Probe Selector Tool at **tek.com/probes.**

③ Choose the right probe for the application.

If possible, select a probe with the same interface type as the oscilloscope that it will be used with. This will avoid the need for an adapter, and provide the best connection.

PASSIVE PROBES

PRODUCT SERIES	STOCK CODE	ATTENUATION	MAX. VOLTAGE	BANDWIDTH	INPUT IMPEDANCE AT THE PROBE TIP	INTERFACE TYPE	COMPENSATION RANGE
P6139B	1863351	10:1	300 V_{RMS} CAT II	500 MHz	10 MΩ, 8 pF	BNC with Readout	8 pF to 18 pF
P5050B	1863352	10:1	300 V_{RMS} CAT II	500 MHz	10 MΩ, 8 pF	BNC	8 pF to 18 pF
P2220	7984219	1:1 10:1	150 V_{RMS} CAT I 300 V_{RMS} CAT II	6 MHz 200 MHz	1 MΩ, 110 pF 10 MΩ, 17 pF	BNC	15 pF to 25 pF
P2221	1665109	1:1 10:1	150 V_{RMS} CAT I 300 V_{RMS} CAT II	6 MHz 200 MHz	1 MΩ, 110 pF 10 MΩ, 17 pF	BNC	10 pF to 25 pF
TPP0200	2345357	10:1	300 V_{RMS} CAT II	200 MHz	10 MΩ, 12 pF	BNC	8 pF to 18 pF
TPP0201	1840970	10:1	300 V_{RMS} CAT II	200 MHz	10 MΩ, 12 pF	BNC	15 pF to 25 pF
TPP0100	2345356	10:1	300 V_{RMS} CAT II	100 MHz	10 MΩ, 12 pF	BNC	8 pF to 18 pF
TPP0101	1840969	10:1	300 V_{RMS} CAT II	100 MHz	10 MΩ, 12 pF	BNC	15 pF to 25 pF

LOW–CAPACITANCE, PASSIVE PROBES (AVAILABLE ONLY FOR THE MSO/DPO5000, MSO/DPO4000B, AND MDO4000 SERIES OSCILLOSCOPES)

PRODUCT SERIES	STOCK CODE	ATTENUATION	MAX. VOLTAGE	BANDWIDTH	INPUT IMPEDANCE AT THE PROBE TIP	INTERFACE TYPE
TPP1000	1856713	10:1	300 V_{RMS} CAT II	1 GHz	10 MΩ, 3.9 pF (Rigid Tip) 10 MΩ, 5.1 pF (Pogo Tip)	TekProbe II
TPP0500B	2381385	10:1	300 V_{RMS} CAT II	500 MHz	10 MΩ, 3.9 pF (Rigid Tip) 10 MΩ, 5.1 pF (Pogo Tip)	TekVPI
TPP0502	1877505	2:1	300 V_{RMS} CAT II	500 MHz	2 MΩ, 12.7 pF	TekVPI

ACTIVE PROBES

PRODUCT SERIES	STOCK CODE	ATTENUATION	MAX. VOLTAGE	BANDWIDTH	INPUT IMPEDANCE AT THE PROBE TIP	INTERFACE TYPE
TAP1500[2]	1856714	10:1	± 8 V	1.5 GHz	1 MΩ, ≤ 1 pF	TekVPI
TAP2500[2]	2400630	10:1	± 4 V	2.5 GHz	40 kΩ, ≤ 0.8 pF	TekVPI
P6205[123]	NIC	10:1	± 10 V	750 MHz	1 MΩ, 2 pF	TekProbe
P6243[123]	207433	10:1	± 8 V	1 GHz	1 MΩ, ≤ 1 pF	TekProbe
P6245[123]	NIC	10:1	± 8 V	1.5 GHz	1 MΩ, ≤ 1 pF	TekProbe

1) Requires TPA-BNC for use with MSO/DPO2000B, MSO/DPO3000, MSO/DPO4000B, MDO4000, and MSO/DPO5000 Series. 2) Requires TekVPI external power supply 119-7465-xx for MSO/DPO2000B Series, and for MSO/DPO3000 Series when total oscilloscope probe power usage exceeds 20W. 3) Requires 1103 TekProbe power supply when used with TBS1000, TDS1000B, TDS2000C, and TPS2000B Series.

DIFFERENTIAL PROBES

PRODUCT SERIES	STOCK CODE	ATTENUATION	MAX. VOLTAGE	BANDWIDTH	INPUT IMPEDANCE AT THE PROBE TIP (DIFFERENTIAL MODE)	INTERFACE TYPE
TDP0500[2]	1856715	5:1 50:1	± 4.25 V (DC + PKac) ± 42 V (DC + PKac)	500 MHz	1 MΩ, < 1 pF	TekVPI
TDP1000[2]	1856717	5:1 50:1	± 4.25 V (DC + PKac) ± 42 V (DC + PKac)	1 GHz	1 MΩ, < 1 pF	TekVPI
TDP1500[2]	2400632	1:1 10:1	± 850 mV ± 8.5 V	1.5 GHz	200 kΩ, < 1 pF	TekVPI
P6246[123]	NIC	1:1 10:1	± 850 mV ± 8.5 V	400 MHz	200 kΩ, < 1 pF	TekProbe
P6247[123]	NIC	1:1 10:1	± 850 mV ± 8.5 V	1 GHz	200 kΩ, < 1 pF	TekProbe
P6248[123]	4352610	1:1 10:1	± 850 mV ± 8.5 V	1.5 GHz	200 kΩ, < 1 pF	TekProbe
P6251[123]	2301080	5:1 50:1	± 4.2 V (DC + PKac) ± 42 V (DC + PKac)	1 GHz	1 MΩ, < 1 pF	TekProbe

CURRENT PROBES

PRODUCT SERIES	STOCK CODE	MAXIMUM CURRENT DC / RMS / PEAK AC	MINIMUM CURRENT	BANDWIDTH	RISE TIME	INTERFACE TYPE
TCP0030A[2]	2318650	30 A / 30 A / 50 A	1 mA	120 MHz	< 2.92 ns	TekVPI
TCP202A[123]	2254471	15 A / 10.6 A / 50 A	10 mA	50 MHz	< 7 ns	TekVPI
TCP0020	2400636	20 A / 20 A / 100 A	10 mA	50 MHz	< 7 ns	TekVPI
TCP2020	2318653	20 A / 20 A / 100 A	10 mA	50 MHz	< 7 ns	BNC
TCP0150[2]	1856719	150 A / 150 A / 500 A	5 mA	20 MHz	< 17.5 ns	TekVPI
TCP312A with TCPA300	2318651 / 4360230	30 A / 21.2 A / 50 A	1 mA	100 MHz	< 3.5 ns	TekProbe
TCP305A with TCPA300	2318652 / 4360230	50 A / 35.4 A / 50 A	5 mA	50 MHz	< 7 ns	TekProbe
TCP303 with TCPA300	4360266 / 4360230	150 A / 150 A / 500 A	5 mA	15 MHz	< 23 ns	TekProbe

1) Requires TPA-BNC for use with MSO/DPO2000B, MSO/DPO3000, MSO/DPO4000B, MDO4000, and MSO/DPO5000 Series. 2) Requires TekVPI external power supply 119-7465-xx for MSO/DPO2000B Series, and for MSO/DPO3000 Series when total oscilloscope probe power usage exceeds 20W. 3) Requires 1103 TekProbe power supply when used with TBS1000, TDS1000B, TDS2000C, and TPS2000B Series.

HIGH–VOLTAGE DIFFERENTIAL PROBES

PRODUCT SERIES	STOCK CODE	ATTENUATION	MAX. VOLTAGE	BANDWIDTH	INPUT IMPEDANCE AT THE PROBE TIP	INTERFACE TYPE
TMDP0200[2]	2072158	250:1 25:1	± 750 V ± 75 V	200 MHz	5 MΩ, 2 pF	TekVPI
THDP0200[2]	2072157	500:1 50:1	± 1500 V ± 150 V	200 MHz	10 MΩ, 2 pF	TekVPI
THDP0100[2]	2072156	1000:1 100:1	± 6000 V ± 600 V	100 MHz	40 MΩ, 2.5 pF	TekVPI
P5200A	1877507	500:1 50:1	± 1300 V ± 130 V	50 MHz	10 MΩ, 2 pF	BNC
P5202A[123]	1877508	200:1 20:1	± 640 V ± 64 V	100 MHz	5 MΩ, 2 pF	TekProbe
P5205A[123]	1877509	500:1 50:1	± 1300 V ± 130 V	100 MHz	10 MΩ, 2 pF	TekProbe
P5210A[123]	1877510	1000:1 100:1	± 5600 V ± 560 V	50 MHz	40 MΩ, 2.5 pF	TekProbe

HIGH–VOLTAGE SINGLE–ENDED PROBES

PRODUCT SERIES	STOCK CODE	ATTENUATION	MAX. VOLTAGE	BANDWIDTH	INPUT IMPEDANCE AT THE PROBE TIP	INTERFACE TYPE
TPP0850[4]	1877506	50:1	2500 VPeak	800 MHz	40 MΩ, 1.5pF	TekVPI
P5150[5]	2060970	50:1	2500 VPeak	500 MHz	40MΩ, 3.8 pF	BNC
P5100A	1877504	100:1	2500 VPeak	500 MHz	40 MΩ, 1.5 pF	BNC
P5122[5]	1824796	100:1	1000 VRMS CAT II	200 MHz	100 MΩ, 4 pF	BNC
P6015A	4352580	1000:1	20,000 VRMS	75 MHz	100 MΩ, 3 pF	BNC

1) Requires TPA-BNC for use with MSO/DPO2000, MSO/DPO3000, MSO/DPO4000, MDO4000, and MSO/DPO5000 Series. 2) Requires TekVPI external power supply 119-7465-xx for MSO/DPO2000 Series, and for MSO/DPO3000 Series when total oscilloscope probe power usage exceeds 20W. 3) Requires 1103 TEKPROBE power supply when used with TDS1000, TDS2000, and TPS2000 Series. 4) Available only for the MSO/DPO5000, MSO/DPO4000B and MDO4000 Series Osciloscopes. 5) May be used for floating measurements - for use with TPS2000 Series only.