

THP0301 300 MHz 10X Voltage Probe Instructions

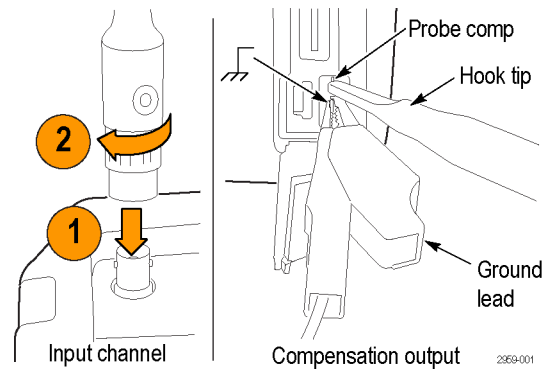


THP0301 10X Probe

The THP0301 Probe is a passive voltage probe with 10X attenuation and a compensation range of 10 to 22 pF. The probe is designed for use with Tektronix THS3000 series handheld oscilloscopes, and is available in four colors that match the oscilloscope input channel colors. (Order THP0301–Y for yellow, –G for green, –M for magenta, and –B for blue.) The probe has no user- or Tektronix-serviceable parts.

Connecting the Probe to the Oscilloscope

Connect the probe as shown in the illustrations below.



Compensating the Probe

Due to variations in oscilloscope input characteristics, the low-frequency compensation of the probe may need adjustment after moving the probe from one oscilloscope channel to another.

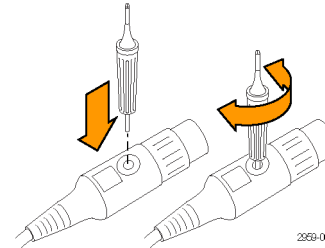
If a 1 kHz calibrated square wave displayed at 1 ms/division shows significant differences between the leading and trailing edges, perform the following steps to optimize low-frequency compensation:

1. Connect the probe to the oscilloscope channel that you plan to use for your measurements.
2. Connect the probe to the probe compensation output terminals located above the USB port on the left side of the instrument.

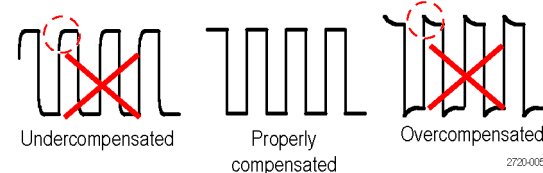
WARNING. To avoid electric shock, only connect to the Probe Comp signal on the oscilloscope when making this adjustment.

3. Press the Ch button for the channel that you are using, and then use the arrow and Enter keys to set the probe attenuation to 10X.
4. Return to the probe menu and select PROBE CAL and Yes to display the rising edge of the calibration waveform.

NOTE. For instruments other than the THS3000 series, push AUTOSET or otherwise adjust your oscilloscope to display a stable waveform.



5. Adjust the trimmer in the probe until you see a perfectly flat-top square wave on the display. (See illustrations.)



WARNING. To avoid electric shock, only use the insulated adjustment tool when making compensation adjustments.

Connecting the Probe to the Circuit

Use the standard accessories included with the probe to connect to your circuit. (See Table 1.)

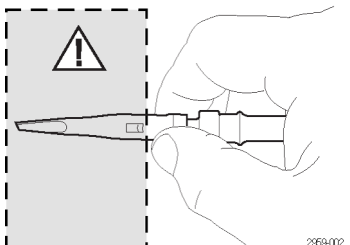
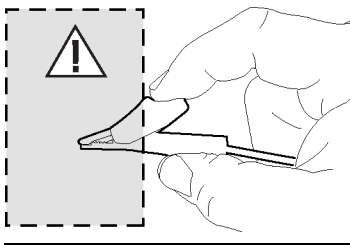
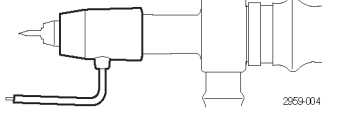
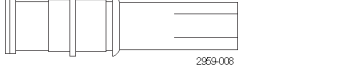
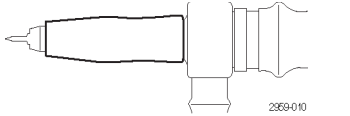

WARNING. To avoid electric shock when using the probe or accessories, keep fingers behind the finger guard of probe body & accessories (as shown).

To reduce risk of shock, when using the probe on floating measurements, ensure the reference lead accessories are fully mated before connecting the probe to the circuit under test.

Standard Accessories

The standard accessories included with the probe are shown below, and can be reordered together as a kit. Order Tektronix part number 020-3085-xx.

Table 1: Standard accessories

Item	Description
	Hook tip <ol style="list-style-type: none"> 1. Press the hook tip onto the probe tip. 2. Pull back the hook tip to extend the conductive hook. 3. Clamp the hook onto your circuit.
	Reference lead, with mini-alligator clip <ol style="list-style-type: none"> 1. Secure the lead to the probe head ground. 2. Squeeze the clip and connect it to the circuit reference.
	Ground spring for probe tip Use this ground spring when you probe circuits with nearby reference connections.
	BNC adapter Use this adapter to easily connect the probe to female BNC connectors.
	Ground cover sleeve Slide this insulated sleeve over the probe tip to cover the probe ground collar. The sleeve helps prevent you from accidentally grounding your circuit.
	Adjustment tool Use only this insulated tool for compensation adjustments.

Specifications

Table 2: Electrical and mechanical specifications

Characteristic	Specification
Bandwidth	DC to 300 MHz (–3 dB)
Rise time	0.9 ns
System attenuation accuracy	10:1
Compensation range	10 pF–22 pF
System input resistance	10 MΩ
System input capacitance	11 pF
Maximum tip input voltage	300 V CAT III
Maximum reference lead voltage to ground	300 V CAT III
Cable length	1.2 m (47 in)

Refer to the derating curves below when making floating measurements.

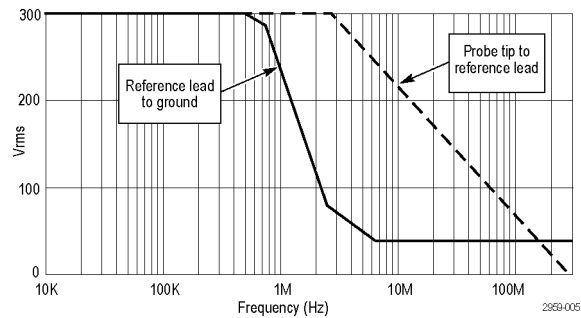


Table 3: Environmental specifications

Characteristics	Description
Temperature	
Operating	5 °C to +40 °C (+41 °F to 104 °F)
Nonoperating	–40 °C to +71 °C (–40 °F to +160 °F)

Characteristics	Description
Humidity	
Operating and nonoperating	80% up to +31 °C (+88 °F), falling linearly to 50% at +40 °C (+104 °F)
Altitude	
Operating	2.0 km (6,560 ft) maximum
Nonoperating	12 km (40,000 ft) maximum

Table 4: Certifications and compliances

Characteristics	Description								
EC Declaration of Conformity	Compliance was demonstrated to the following specification as listed in the Official Journal of the European Communities: Low Voltage Directive 2006/95/EC: EN61010-031: 2008								
Measurement Category Descriptions	<table border="1"> <thead> <tr> <th>Category</th> <th>Examples of Products in this Category</th> </tr> </thead> <tbody> <tr> <td>CAT III</td> <td>Distribution-level mains, fixed installation</td> </tr> <tr> <td>CAT II</td> <td>Local-level mains, appliances, portable equipment</td> </tr> <tr> <td>CAT I</td> <td>Circuits not directly connected to mains.</td> </tr> </tbody> </table>	Category	Examples of Products in this Category	CAT III	Distribution-level mains, fixed installation	CAT II	Local-level mains, appliances, portable equipment	CAT I	Circuits not directly connected to mains.
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CAT III	Distribution-level mains, fixed installation								
CAT II	Local-level mains, appliances, portable equipment								
CAT I	Circuits not directly connected to mains.								
Pollution Degree 2	Do not operate in environments where conductive pollutants may be present (as defined in IEC 61010-1). Rated for indoor use only.								
Additional Safety Standards	UL61010-031:2010 CAN/CSA-C22.2 No. 61010-031-10 IEC61010-031:2008								



Equipment Recycling. This product complies with the European Union's requirements according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). For more information about recycling options, check the Support/Service section of the Tektronix Web site (www.tektronix.com).

Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use this product only as specified. Using the probe or accessories in a manner not specified could result in a shock or fire hazard.

To Avoid Fire or Personal Injury

For Use With THS3000 Series Oscilloscopes Only. Do not float the reference lead of this probe above the rated float voltage (300 V RMS CAT III).

Connect and Disconnect Properly. Connect the probe output to the measurement instrument before connecting the probe to the circuit under test. Disconnect the probe input and the probe reference lead from the circuit under test before disconnecting the probe from the measurement instrument.

Avoid Electric Shock. To avoid injury or loss of life, do not connect or disconnect probes or test leads while they are connected to a voltage source.

Observe All Terminal Ratings. To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product.

Avoid Electric Shock. When using probe accessories, never exceed the lowest rating of the probe or its accessory, whichever is less, including the measurement category and voltage rating.

Avoid Electric Overload. To avoid injury or fire hazard, do not apply potential to any input, including the reference inputs, that varies from ground by more than the maximum rating for that input.

Avoid Exposed Circuitry and Do not Operate Without Covers. Do not touch exposed connections and components when power is present.

Inspect The Probe and Accessories. Before each use, inspect probe and accessories for damage (cuts, tears, defects in the probe body, accessories, cable jacket, etc.). Do not use if damaged.

Do Not Operate in Wet/Damp Conditions.

Do Not Operate in an Explosive Atmosphere.

Keep Product Surfaces Clean and Dry.

Safety Terms and Symbols Terms in This Manual.

These terms may appear in this manual:

WARNING. Warning statements identify conditions or practices that could result in injury or loss of life.

CAUTION. Caution statements identify conditions or practices that could result in damage to this product or other property.

Symbols on the Product. These symbols may appear on the product:



CAUTION
Refer to Manual

Contacting Tektronix

Web site: www.tektronix.com

Phone: 1-800-833-9200

Address: Tektronix, Inc.
Department or name (if known)
14200 SW Karl Braun Drive
P.O. Box 500
Beaverton, OR 97077
USA

Email: techsupport@tektronix.com

Warranty Information

For warranty information, go to www.tektronix.com/warranty

