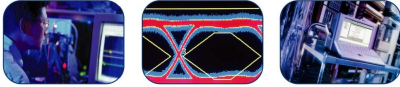


P6316 Digital Probe

Instructions

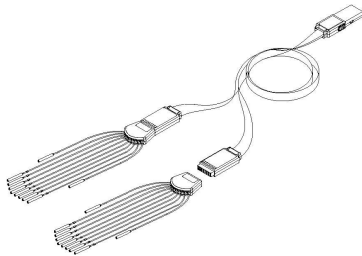


Tektronix

Product Description

The P6316 digital probe connects the Tektronix MSO2000 Series of mixed-signal oscilloscopes to digital buses and signals on your target system. The probe breaks out 16 data channels over two 2x8-pin headers (GROUP 1 and GROUP 2). Each header includes eight signals on one row and eight grounds along the opposite row.

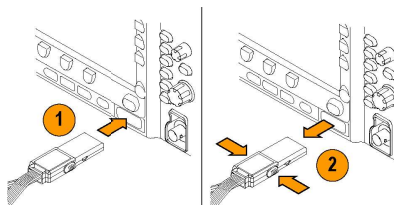
A pair of interchangeable flying lead sets are included with the probe. The lead sets bring out one ground connection on each end and eight signal leads for connecting to individual test points.



Connecting the Probe to the Oscilloscope

Connect the probe as shown in the illustration below.

1. Insert the probe label-side up into the receptacle.
2. To remove the probe, squeeze the buttons on the side and pull out the probe.



Connecting the Probe to Your Circuit

Attach the probe to the circuit using the connectors and adapters shown on the back of these instructions. Select the best method for your needs, and then proceed to Setting up the Probe.

Setting up the Probe

Press the D15-D0 button to set and view the following parameters of each digital channel:

- Threshold voltage and vertical position
- Signal height (set once for all 16 channels)
- Channel label

The default settings are 1.4 V thresholds with no channel labels.



Use the B1 and B2 buttons to set and view bus characteristics such as:

- Clock type
- Bus type (Serial or Parallel)
- Bus width
- Display format (Hex, Binary, ASCII)



Parallel bus setup information is resident on the MSO Family of oscilloscopes. However, for other buses such as CAN and I2C, you must have the appropriate application key. See your oscilloscope manual or product data sheet for nomenclature and ordering details.

Functional Check

Logic activity immediately displays on all connected, active channels. If you do not see an active signal:

1. Press Trigger.
2. Select Edge for trigger type.
3. Select the channel that you are setting up as the source.
4. Press Autoset.

If you do not see an active signal, try another probe channel (or analog probe) to verify circuit activity at the test point.

Specifications

Table 1: Electrical and mechanical specifications

Characteristic	Description
Input channels	16
Threshold voltage range	±20 V
Threshold accuracy	±100 mV + 3% of threshold setting
Minimum signal swing	500 mV p-p
Maximum signal swing	±20 V centered around the threshold voltage
Maximum nondestructive input signal to probe	±40 V p-p
Input resistance	101 kΩ
Input capacitance	8.0 pF
Minimum detectable input pulse	5 ns
Probe length	0.9 m (3 ft)

Table 2: Environmental specifications

Characteristics	Description
Temperature	
Maximum operating	+50 °C (+122 °F)
Minimum operating	0 °C (+32 °F)
Nonoperating	-40 °C to +71 °C (-40 °F to +160 °F)
Humidity	5% to 95% relative humidity at up to +30 °C (+86 °F) 5% to 60% RH above +30 °C (+86 °F) up to +50 °C (+122 °F), non-condensing
Altitude	
Operating	3 km (9,843 ft) maximum
Nonoperating	12 km (39,370 ft) maximum
Electrostatic Immunity	The probe is not static sensitive



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

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 ground from the circuit under test before disconnecting the probe from the measurement instrument.

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.

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

Avoid Exposed Circuitry. Do not touch exposed connections and components when power is present.

Do Not Operate With Suspected Failures. If you suspect there is damage to this product, have it inspected by qualified service personnel.

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.

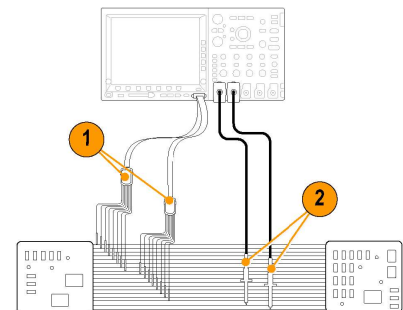
CAUTION. Caution statements identify conditions or practices that could result in damage to this product or other property.

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



Typical Application

1. Use the P6316 probe to view digital signals on a system bus.
2. Use analog probes, such as the P6139A or P2221 probe to view analog waveform information.

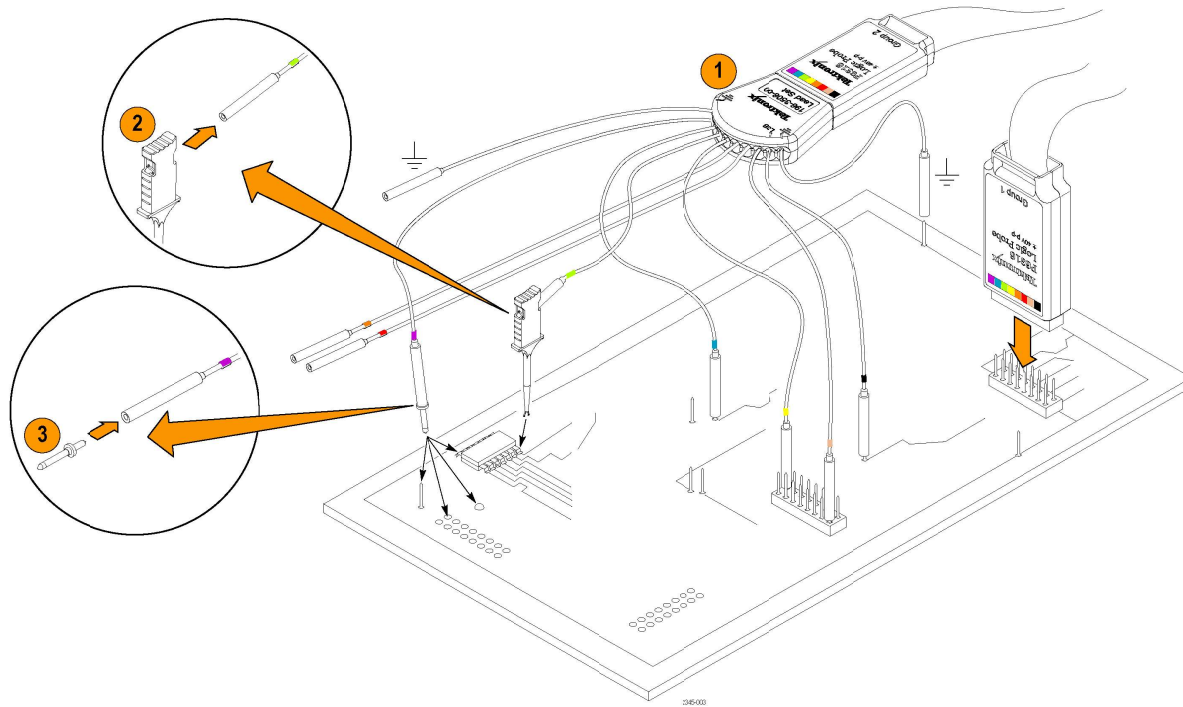


Probe Lead Sets

	GROUP 1	GROUP 2
Black probe	0	8
Brown probe	1	9
Red probe	2	10
Orange probe	3	11
Yellow probe	4	12
Green probe	5	13
Blue probe	6	14
Violet probe	7	15

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Connecting the Probe to the Circuit



Standard Accessories

The following standard accessories ship with the probe and are shown in the illustration above.

Item number	Description	Quantity	Part number
1	8-Channel leadset	2 ea	196-3508-XX
2	Micro grabber clip	2 kits of 10 ea	020-2896-XX
3	Probe tip	2 kits of 5 ea	020-2897-XX
	Instructions (English, Japanese, & Simplified Chinese languages)	1 ea	071-2345-XX

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
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 Email: techsupport@tektronix.com

Warranty Information

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