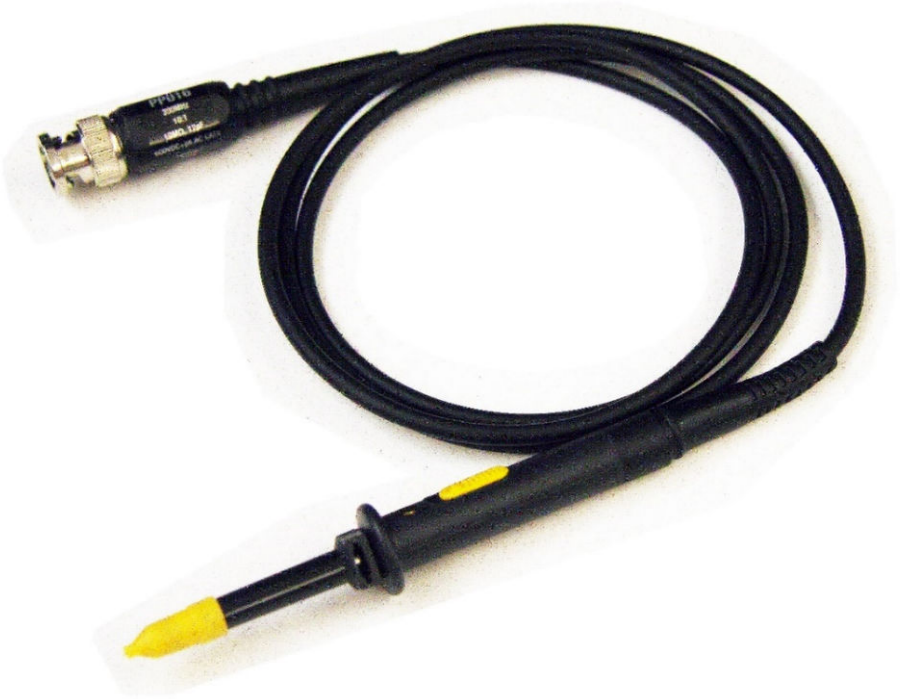
TELEDYNE LECROY
Everywhereyoulook™



Operator's Manual

PP016 Passive Probe

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Warranty

Teledyne LeCroy warrants this oscilloscope accessory for normal use and operation within specification for a period of one year from the date of shipment. Spare parts, replacement parts and repairs are warranted for 90 days.

In exercising its warranty, Teledyne LeCroy, at its option, will either repair or replace any assembly returned within its warranty period to the Customer Service Department or an authorized service center. However, this will be done only if the product is determined by Teledyne LeCroy's examination to be defective due to workmanship or materials, and the defect is not caused by misuse, neglect, accident, abnormal conditions of operation, or damage resulting from attempted repair or modifications by a non-authorized service facility.

The customer will be responsible for the transportation and insurance charges for the return of products to the service facility. Teledyne LeCroy will return all products under warranty with transportation charges prepaid.

This warranty replaces all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability, fitness or adequacy for any particular purposes or use. Teledyne LeCroy shall not be liable for any special, incidental, or consequential damages, whether in contract or otherwise.

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Safety Instructions

Follow generally accepted safety procedures in addition to the precautions specified in this section. **The overall safety of any system incorporating this accessory is the responsibility of the assembler of the system.**

Symbols

These terms and symbols may appear on the probe body or in this manual to alert you to important safety considerations.



High Voltage WARNING, risk of electric shock or burn.



CAUTION of potential damage to equipment, or **WARNING** of potential injury. Attend to the accompanying information to protect against personal injury or damage. Do not proceed until conditions are fully understood and met.



DOUBLE INSULATION



PROTECTIVE (EARTH) TERMINAL

Precautions

To avoid personal injury or damage to property, review and comply with the following safety precautions. **Use product only as specified.**

Connect only to grounded instruments. Use only with compatible Teledyne LeCroy oscilloscopes that have their BNC input connected to an earth ground. Do not connect the probe reference lead to any point which is at a potential other than earth ground.

Connect and disconnect properly. Connect probe to the oscilloscope before connecting the probe to the test circuit. Disconnect the probe input and reference lead from the test circuit before disconnecting the probe from the oscilloscope. To avoid injury or death due to electric shock, do not connect or disconnect probes or probe accessories while they are connected to a voltage source.

Do not overload; observe all terminal ratings. To avoid electric shock or fire, do not apply any potential to the probe leads that exceeds the maximum rating of the probe. Consult the respective oscilloscope product manual for further ratings information.

Comply with voltage derating curve. When measuring higher frequency signals, comply with the Voltage vs. Frequency Derating Curve.

Do not remove probe casing. Removing the probe's case or touching exposed connections may result in electric shock.

Use only within operational environment listed. Use indoors only. Do not use in wet or explosive atmospheres. Keep product surfaces clean and dry.

Use only accessories compatible with the probe.

Handle with care. The probe tip is extremely sharp and may puncture skin or cause other bodily injury if not handled properly.

Keep fingers behind the finger guard of probe body and accessories.

Do not operate with suspected failures. Before each use, inspect the probe and accessories for any potential damage such as tears or other defects in the probe body, cable jacket, accessories, etc. If any part is damaged, cease operation immediately and sequester the probe from inadvertent use.

Introduction

PP016 is a passive probe designed to be used with Teledyne LeCroy WaveAce oscilloscopes.



Keep fingers behind the probe's finger guard during use.



Rated for indoor use only. Do not operate where conductive pollutants may be present.



Maximum input voltage derates when frequency response is approximately 30 kHz or higher. See voltage derating curve on p.4.

Specifications

Electrical Characteristics

Attenuation	1:1	10:1
Bandwidth	10 MHz	300 MHz
Input Resistance	1 MΩ	10 MΩ
Input Capacitance	46 pF	12 pF
Compensation Range	NA	10–35 pF

Electrical Ratings*

Max. Input Voltage	CAT II, 600 V (AC + DC_{peak})
Pollution Degree	2

* See Certifications for an explanation of rating categories.

Operating Environment

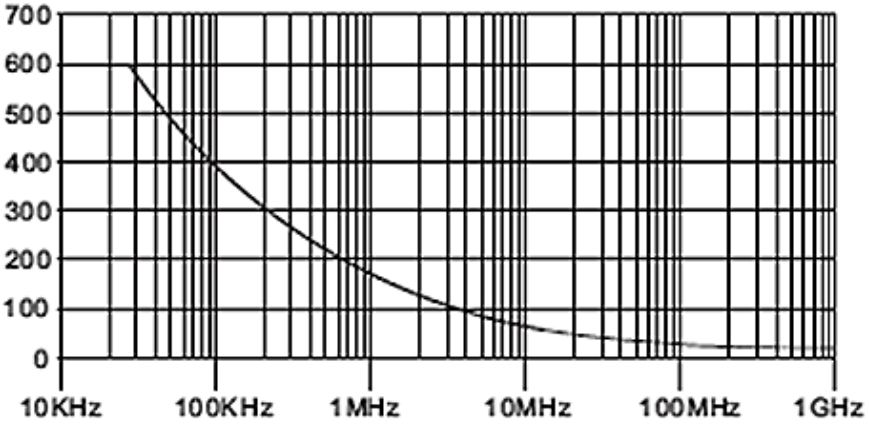
Temperature, Operating	0° to 50° C
Temperature, Storage	-20° to 60° C
Altitude, Operating	Up to 3000 m (9842 ft)
Humidity, Operating	5% to 85% RH to 30° C 5% to 65% RH 30° C to 40° C 5% to 45% RH above 40° C

General Characteristics

Cable Length	1.2 m
Weight (probe only)	54 g
Connector Type	BNC

Voltage Derating Curve

(Max. V_{IN} vs. Frequency)



Connectivity Accessories

The following accessories are included standard with the PP016:

	QTY
Standard Ground Lead	1
Sprung Hook	1
Color Coding Rings (set)	2
Adjustment Tool	1
Ground Attachment	1
Replacement Probe Tip	2
BNC Adaptor	1
IC Test Tip	2

The Standard Accessory Replacement Kit for the PP016 probe is P/N PKIT3-5MM-101.

Use and Maintenance

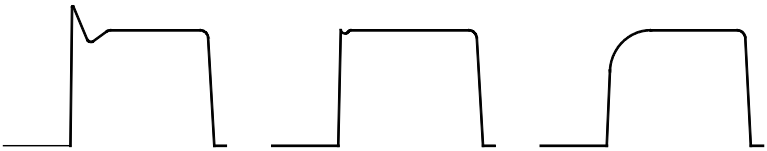
Cleaning

The outside of the probe should cleaned with a soft cloth dampened with either deionized / distilled water or isopropyl alcohol. Allow the surface to dry completely before returning the probe to service. Never immerse the probe in any liquid.

Probe Compensation

Proper compensation of the probe is required to assure good amplitude accuracy in the dynamic portions of the waveform being measured. LF compensation matches the probe to differences in oscilloscope input capacitance. The LF compensation should always be checked and adjusted as needed when first connecting a passive probe to the oscilloscope input. HF compensation matches time constants within the probe to compensate for normal component tolerances. It is typically not necessary to adjust HF compensation unless the probe is being used with an oscilloscope with large differences in input characteristics than the oscilloscope model it was designed for.

LF compensation is performed by connecting the input of the probe to a low frequency square wave, such as the oscilloscope calibrator signal set to 1 kHz. The compensation is adjusted by rotating the adjustment accessible through the small hole in the center of the housing near the BNC connector. Use the tool supplied with the probe for this adjustment.



Over-compensated, correct, and under-compensated waveforms

Certifications

Teledyne LeCroy certifies compliance to the following standards as of the date of publication. See the EC Declaration of Conformity shipped with the product for current certifications.

EC Declaration of Conformity - Safety

The probe meets intent of EC Directive 2014/35/EU for Product Safety. Compliance was demonstrated to the following specifications as listed in the Official Journal of the European Communities:

IEC/EN 61010-031:2015 Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for handheld probe assemblies for electrical measurement and test.

- Measurement Category II (CAT II) refers to measurements performed on circuits directly connected to utilization points (socket outlets and similar) of the low-voltage mains installation.
- Pollution Degree 2, operating environment where normally only dry non-conductive pollution occurs. Conductivity caused by temporary condensation should be expected.

Environmental Compliance

End-Of-Life Handling



The probe is marked with this symbol to indicate that it complies with the applicable European Union requirements to Directives 2012/19/EU and 2013/56/EU on Waste Electrical and Electronic Equipment (WEEE) and Batteries.

The probe is subject to disposal and recycling regulations that vary by country and region. Many countries prohibit the disposal of waste electronic equipment in standard waste receptacles. For more information about proper disposal and recycling of your Teledyne LeCroy product, please visit teledynelecroy.com/recycle.

Restriction of Hazardous Substances (RoHS)

The probe and accessories conform to the 2011/65/EU RoHS2 Directive.

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