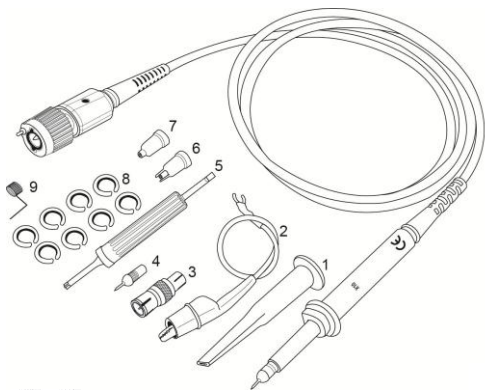




PP017/PP018 Passive Probe Instruction Manual



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PP017/PP018 Passive Probe Instruction Manual

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920876-00 Rev A

Warranty

NOTE: THE WARRANTY BELOW REPLACES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS, OR ADEQUACY FOR ANY PARTICULAR PURPOSE OR USE. TELEDYNE LECROY SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN CONTRACT OR OTHERWISE. THE CUSTOMER IS 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 TRANSPORT PREPAID.

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 the warranty period to the Customer Service Department of an authorized service center. However, this will be done only if the product is determined by Teledyne LeCroy's examination to be defective because of workmanship or materials, and the defect is not caused by misuse, neglect, accident, abnormal conditions of operation; or, damaged by 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.

Terms and Symbols

The following terms appear in this manual:



Warnings identify conditions or practices that could result in injury or loss of life.

WARNING

The following symbols may appear on the product:



DANGER High Voltage



ATTENTION Refer to Manual



DOUBLE INSULATION



PROTECTIVE (EARTH) TERMINAL

Introduction

The Teledyne LeCroy PP017 and PP018 are passive high impedance voltage oscilloscope probes designed and calibrated for use with general purpose oscilloscopes having an input impedance of 1 M Ω shunted by 16 pF. However, they may be compensated for use with instruments having an input capacitance between 10 to 30 pF. They are compatible with oscilloscopes that automatically detect probe attenuation and adjust their readout accordingly.



To avoid electric shock, keep fingers behind the probe's finger guard during use.

WARNING

Specifications

| Model | Attn. | Input Imped. | | B/W (MHz) | Rise Time (ns) | Length (m) | Compensation Range (pF) |
|--------------|-------|--------------|--------|--------------|-------------------|---------------|----------------------------|
| | | R (MΩ) | C (pF) | | | | |
| PP017 | 10x | 10 | 12 | 250 | 1.4 | 1.3 | 10 - 30 |
| PP018 | 10x | 10 | 10 | 500 | 0.7 | 1.3 | 6 - 22 |

Attenuation Ratio 10x (10:1) 10:1 ±0.5%

Max. Input Voltage 600 V CAT I or 300 V CAT II (DC + peak AC)

..... Derated with Frequency (see Derating Curve)

Pollution Degree Pollution Degree 2 (as defined in EN 61010-031)

Max. Operating Temp 0° to +50 C°

Humidity 85% RH or less (at 35° C)



WARNING

To reduce risk of fire or electric shock, do not exceed the voltage or category ratings of the probe.

Definitions:

Measurement Category I (CAT I) is for measurements performed on circuits not directly connected to mains.

Measurement Category II (CAT II) is for measurements performed on circuits directly connected to the low voltage installation. Examples are on household appliances, portable tools, and similar equipment.

Pollution Degree 2 refers to an operation environment where normally only dry non-conductive pollution occurs. Temporary conductivity caused by condensation must be expected.

EC Declaration of Conformity

Compliance was demonstrated to the specification as listed in the Official Journal of the European Communities: Low Voltage Directive 2006/95/EC.

EN 61010-031/A1:2008 Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for handheld probe assemblies for electrical measurement and test.

General Safety Information

To avoid personal injury and to prevent fire or damage to the probe or any product connected to it, review and comply with the following safety precautions.

Using the probe and/or the test instrument it is connected to in a manner not specified by the manufacturer may impair the protection mechanisms.

Connect to properly grounded instruments. Use only with test instruments having their BNC input connected to earth ground. Do not connect the probe ground terminal to any point which is at a potential other than earth ground.

Do not disconnect the probe from instrument during measurement. Connect the probe to the measurement instrument before connecting the probe to the test circuit.

Do not apply to the input any potential that exceeds the maximum rating of the probe. Use only the accessories provided with the probe.

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

Do not remove probe casing. Removal of the probe's casing may expose you to electric shock.

Do not use if any part is damaged. All maintenance should be referred to qualified service personnel only.

Do not use in wet or explosive atmospheres.

Avoid physical injury. The probe tip is extremely sharp. Use care when handling to prevent injury, including accidental skin puncture.

For indoor use only.

Cleaning

Use the following guidelines:

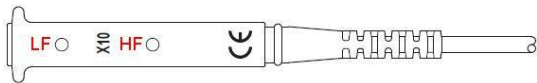
- Clean only the exterior of the probe, cables, and accessories. Use a soft cotton cloth moistened with a mild detergent and water solution. Do not allow any portion of the probe to be submerged at any time.
- Dry the probe and accessory thoroughly before attempting to make any voltage measurement.
- Do not subject the probe to solvents or solvent fumes as these can cause deterioration of the probe body, cables, and accessories.

Probe Compensation

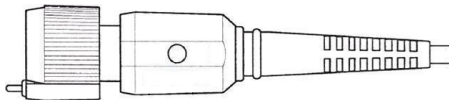
Proper compensation of the probe is required to assure amplitude accuracy of the waveform being measured by matching the probe to the oscilloscope's input capacitance. Compensation should be adjusted whenever the probe is connected to or transferred between oscilloscopes.

Low Frequency (LF)

1. Apply a 1 kHz square wave to the probe or connect to the oscilloscope's calibrator output.
2. Adjust the left trimmer (LF) located on the PP017 probe body:



or the trimmer located on the PP018 BNC Box:



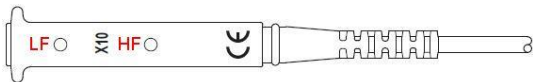
until you achieve a flat-topped square wave per the center illustration in the figure below.



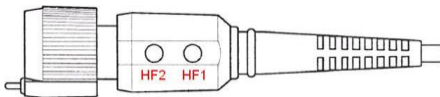
High Frequency (HF)

High frequency should rarely require adjustment. However, if adjustment is required:

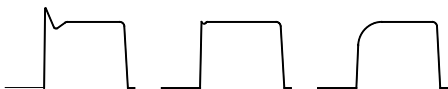
1. Apply a 1 MHz square wave to the probe (< 0.7 ns rise-time).
2. Adjust the right trimmer (HF) located on the PP017 probe body:



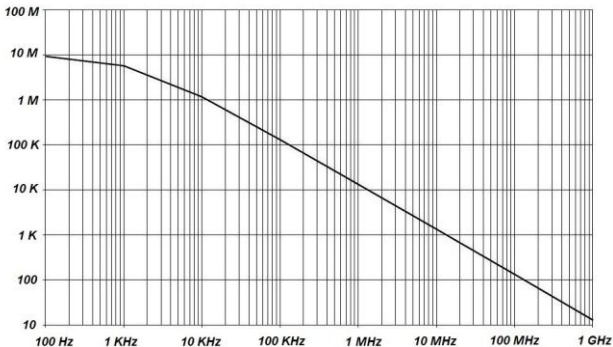
or both trimmers on the PP018 BNC Box (HF2 or HF1):



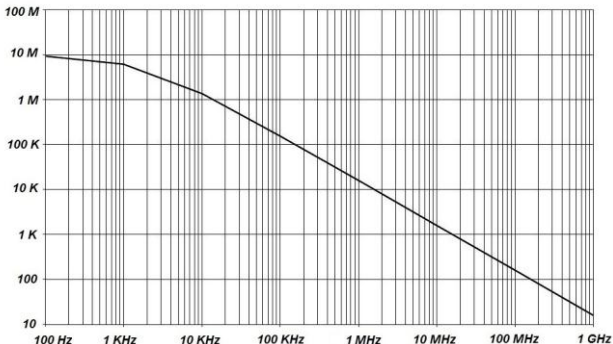
until you achieve a flat-topped square wave per the center illustration in the figure below.



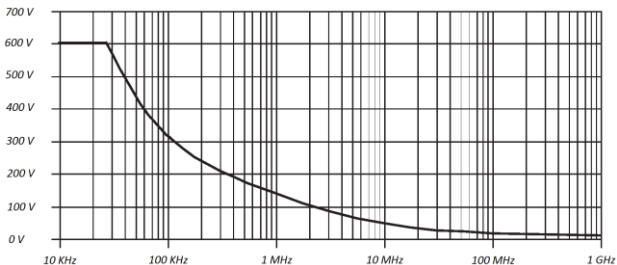
PP017 Input Impedance Profile



PP018 Input Impedance Profile



Voltage vs. Frequency Derating Curve



China RoHS Compliance

| Part Name | Toxic or Hazardous Substances and Elements | | | | | |
|---|--|--------------|--------------|----------------------------|--------------------------------|---------------------------------------|
| | Lead (Pb) | Mercury (Hg) | Cadmium (Cd) | Hexavalent Chromium (Cr6+) | Polybrominated Biphenyls (PBB) | Polybrominated Diphenyl Ethers (PBDE) |
| PCBAs | X | O | X | X | X | X |
| Mechanical Hardware | O | O | X | O | O | O |
| Sheet Metal | O | O | X | O | O | O |
| Plastic Parts | O | O | O | O | X | X |
| Protective Case | O | O | O | O | X | X |
| Cable Assemblies | X | O | X | O | X | X |
| Probe Tips | X | O | X | O | X | X |
| O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement specified in SJ/T11363-2006. | | | | | | |
| X: Indicates that this toxic or hazardous substance contained in at least one of the homogenous materials used for this part is above the limit requirement specified in SJ/T11363-2006. | | | | | | |

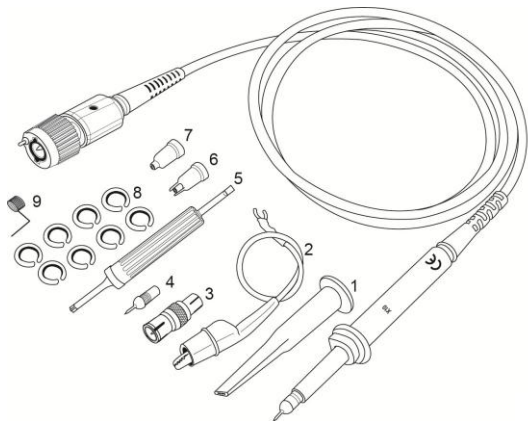
EFUP (Environmental Friendly Use Period): 30 Years. Use Conditions: refer to the environmental conditions stated in the Specifications section of this Manual.

PP017/PP018 Passive Probe

| 部件名称 | 有毒有害物质和元素 | | | | | |
|---|-----------|-----------|-----------|----------------------------|---------------|-----------------|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr ⁶⁺) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| PCBAs | X | O | X | X | X | X |
| 机械硬件 | O | O | X | O | O | O |
| 金属片 | O | O | X | O | O | O |
| 塑料部件 | O | O | O | O | X | X |
| 保护外壳 | O | O | O | O | X | X |
| 电缆组件 | X | O | X | O | X | X |
| 探头端部 | X | O | X | O | X | X |
| O: 表明该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求之下。 | | | | | | |
| X: 表明该有毒有害物质至少在该部件的某一均质材料中的含量均在SJ/T11363-2006标准规定的限量要求。 | | | | | | |

EFUP (对环境友好的使用时间) 使用条件：参阅本手册“规范”部分规定的环境条件。

Replaceable Parts



| Item | Description | Quantity |
|------|-------------------------------|----------|
| 1 | Sprung Hook, 5 mm, Black | 1 |
| 2 | GND Lead w/Alligator Clip | 1 |
| 3 | BNC Adapter, 5 mm | 1 |
| 4 | Replacement Tip, Black | 1 |
| 5 | Deluxe Trimmer Tool | 1 |
| 6 | IC Tip Insulator, 5 mm, Black | 1 |
| 7 | Tip Insulator, 5 mm, Black | 1 |
| 8 | Identifier Rings | 1 |
| 9 | Probe Tip GND | 1 |

Standard Accessory Replacement Kit part number is **PKIT4-5MM-101**.

Contact Teledyne LeCroy

Contact your local Teledyne LeCroy office for sales and support.

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